

Contents for Phonos Help

Welcome to the Phonos Help File, which is designed to give you on-line help in *Phonos - The Digital SoundShop*. For more detailed information, you may consult your Phonos User's Manual.

For information on how to use the Windows Help System, press **F1**.

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Technical Support



If you have questions, problems, or comments regarding Phonos - The Digital SoundShop, or you are inquiring about future updates of Phonos, please contact I.Q. Soft at the address and phone numbers

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Please have the registration number of your copy of Phonos, your computer configuration, and brand of sound card available when contacting I.Q. Soft.

Phonos' Menus

Phonos' commands are arranged in groups under menus that have one-word names. These single words appear in the horizontal menu bar at the top of the Main Screen. Each Phonos menu item is related in some way to others in the same menu. Such a collection of "menus" contain the full complement of "commands" with which the Phonos user executes operations with audio files.

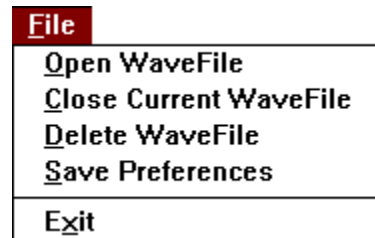
To know more, point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



File Menu Items

The **File Menu** items are concerned with external (to editing, etc.) functions, such as the organization and storage of audio files. You use them to (1) open the WaveFile you want to edit, (2) delete the WaveFiles you want to discard, (3) save your Phonos preferences, and (4) terminate your Phonos session.

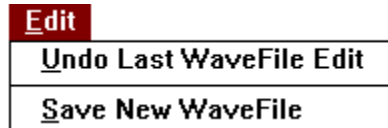
To know more, point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



Edit Menu Items

The *Edit Menu* contains the two options that allow you to update the current edit of the WaveFile you are working on and to revert back to a previous edited version.

To know more, point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



Zoom Menu Items

The *Zoom Menu* items allow you to zoom in on the beginning or end of any currently marked area, so that you may make your edits much more precise.

To know more, point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



Clips Menu Items

The Clips Menu items make up the core of Phonos' capabilities. The first four relate to entire ClipFiles, which are "folders" containing one or more ClipAreas. The rest have to do with *individual* ClipAreas and are central to Phonos' editing capabilities.

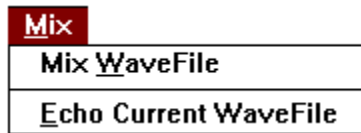
To know more, point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.

Clips
O pen ClipFile C lose ClipFile S ave ClipFile D elete ClipFile
N ame Marked Area C lear M arked Area D elete Marked Area I nset ClipArea D elete ClipArea
M ix ClipArea With W aveFile E cho ClipArea
I ncrease ClipArea Volume D ecrease ClipArea Volume
U ndo Mrk B Clip

Mix Menu Items

The Mix Menu items are concerned with Phonos' mixing and echo capabilities. These procedures may be undone or saved by using the Undo Last WaveFile Edit or the Save New WaveFile commands from the ***Edit*** Menu, respectively.

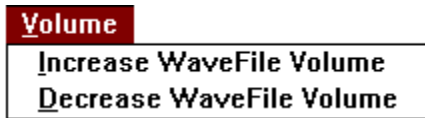
To know more, point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



Volume Menu Items

The Volume Menu items relate to adjusting the volume level of the currently *open* WaveFile.

Also, you can point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



MIDI Menu Items

The MIDI Menu items allow you to playback (and even delete) MIDI Files with Phonos. To know more, point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



Creating ClipAreas

The creation and use of ClipAreas is the core of Phonos' editing capabilities. ClipAreas are small "snippets" from WaveFiles and are very easy to create. Follow the steps below to create a ClipAreas.

1. Mark the desired beginning of the new ClipArea by pointing and clicking a black line in the Expanded View with your left mouse button, and click the Mrk B Clip button to *lock* that position as the beginning.
2. Mark the desired end of the ClipArea by pointing and clicking another black line into the Expanded View with your left mouse button, and click the Mrk E Clip button to *lock* that position as the ending.

The area between the two lines that you marked should now be blackened. This is the region you have selected as your new ClipArea. It is not yet a ClipArea, however. To make it a ClipArea, simply choose the Name Marked Area command from the Clips Menu.

See also:

[Saving ClipFiles](#)

[Sorting ClipAreas into Directories](#)

Manipulation Window Controls - Main Screen

The Manipulation Window Controls are those buttons that are arranged across the middle of your Main Screen in the WaveFile Manipulation Controls Window. Those on the top row are based on the familiar cassette player and perform identical or similar functions, while the controls on the bottom are specific to digital audio editing and Phonos.

Use the graphic below to obtain help on each of the *Manipulation Window Controls* buttons. Point and click anywhere, as appropriate. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



Volume Adjustments

Phonos provides the user with a vast range of volume-adjustment ability. To increase or decrease the volume of a WaveFile select the *Increase WaveFile Volume* or *Decrease WaveFile Volume* command from the **Volume** Menu. This will open the "Adjust Volume" dialog box. At this point, you can use the scroll bar (in one of three simple ways) to adjust the volume of the current WaveFile.

Making the Adjustment Use the scroll bar to increase or decrease the volume of your WaveFile in increments of one percent by (1) dragging the scroll thumb to the left (for a lesser percentage of increase or decrease) or to the right (for a greater percentage of increase or decrease), or (2) by putting your cursor on the left or right arrows at the ends of the scroll bar and clicking the left mouse button. You can also make the scroll thumb jump in 10% increments simply by clicking inside the scroll bar to the left or right of the scroll thumb.

The waveform of the currently adjusted WaveFile will show a change, vertically, that is commensurate with the increase or decrease you ordered when you clicked the **OK** button in the dialog box. Now, preview your adjustment by clicking the **Play** button. If you are satisfied with the change, use the Save New WaveFile command from the **Edit** Menu. This will replace the pre-adjusted entity with the newly adjusted one.

Warning In theory, you can recover a WaveFile at its pre-adjusted volume by simply performing the opposite adjustment. This can be done an unlimited amount of times without any wear on the entity, as it is digital. However, if the volume is adjusted downward into the almost inaudible range, the effect---which is permanent if the WaveFile is saved after such an adjustment---is that of smoothing out the more subtle contours of the recording and its corresponding detail in the waveform. When the entity so adjusted (and saved) is brought back up to a reasonable volume, its quality and continuity will have been degraded by a considerable magnitude. For this reason it is advisable to playback your adjusted WaveFile as many times as you need to before saving it (and thereby destroying the previous entity).

Inserting ClipAreas

The digital insertion of a ClipArea within a WaveFile is a procedure that is destined to become routine and taken for granted, particularly by Phonos users, who can do it more easily than anyone else, anywhere. In the past, however, this was a messy business, requiring three manual splices, one to tie the cut ends of the source tape together and two more to insert the clip elsewhere.

An insertion with Phonos involves three simple steps: (1) marking the point of insertion, (2) selecting the ClipArea to be inserted, (3) and using the *Insert ClipArea* command.

- 1. Marking** Move your cursor to the precise position of the insertion in the Expanded View; point and click a black line into place by using your left mouse button.
- 2. Selecting** Choose the ClipArea you want inserted. Its name must be present in the ClipFile Window (that is, the ClipFile it is part of must be current). Select it by clicking it once with your left mouse button.
- 3. Insertion** Click the Insert ClipArea command from the Clips Menu. This will complete the insertion.

Mixing Two WaveFiles

To mix two WaveFiles (the current one and another from the WaveFile directory), open the current WaveFile with, as always, the File Menu's Open WaveFile command. Select the point you want the mixing to start from by pointing and clicking a black line into the Expanded View. Choose the Mix WaveFile command from the **Mix** Menu to open the WaveFile directory. Choose the WaveFile that you wish to mix into the current one, and click **OK**. The mixing now proceeds from the specified position. If the introduced WaveFile exceeds the end of the current WaveFile, then the unmixed portion of the introduced WaveFile is left off.

The *Mix WaveFile* command only results in a temporary mixing on the two WaveFiles. Preview the result with the Play button. If the composite WaveFile is satisfactory, you can permanently merge its two components with the Save New WaveFile command in the **Edit** Menu. This command permanently mixes the introduced WaveFile (which is a copy of the original in your directory) into your current WaveFile. For this reason, a warning box appears to remind you that the current WaveFile will be permanently altered by the mixing.

Mixing a ClipArea and WaveFile

To mix a ClipArea with the current WaveFile, follow this procedure: Mark the position where the mix is to start by pointing and clicking a black line into place in the Expanded View. Then, select the ClipArea to be mixed by pointing and clicking its name in the ClipFile Window, and choose the Mix ClipArea With WaveFile command from the **Clips** Menu. This executes the mixing from the desired position. You may preview the newly mixed WaveFile by pressing the Play button. If the result is satisfactory, save it by choosing the Edit Menu's Save New WaveFile command. A warning box will appear because the current WaveFile's previous version will be permanently altered by being replaced by the mixed entity (although the ClipArea you introduced still exists, in its original form, in the ClipFile Window for future mixing/editing operations.).

Echo WaveFile

To add an echo, or reverberation, to the current WaveFile, simply choose the *Echo WaveFile* command from the Mix Menu. That is all. Use the Play button to preview the result.

If you wish to save the echo version, simply click the *Save New WaveFile* command in the *Mix* Menu.

Echo ClipArea

To add an echo, or reverberation, to the currently selected ClipArea, simply click the Echo ClipArea command from the **Clips** Menu. That is all. Listen to the result by double-clicking on the ClipArea's name in the ClipFile Window.

Note: Echoing a ClipArea automatically alters the selected ClipArea. All operations of ClipAreas are automatically destructive (you will not be able to retrieve the original).

Opening a ClipArea as a WaveFile

ClipAreas can be mixed, inserted, echoed, volume-adjusted, etc., but the WaveFile is, under normal circumstances, the audio file type that is actually edited.

On occasion, however, you may want to edit a ClipArea in the same way and for the same reasons that you edit WaveFiles. Because ClipAreas are (in an important sense) small WaveFiles, you may open them onto Phonos' Main Screen just as if you were opening a WaveFile. Instead of opening the ClipArea through the Clips Menu's *Open ClipFile* command, you will open it through the File Menu's *Open WaveFile* command. To do this, use the following steps:

- 1. Open the WaveFile Directory** with the File Menu's *Open WaveFile* command to summon the "Open WaveFile" window.
- 2. Choose the Audio File Type** from the small box in the lower left corner of the window, find "ClipAreas (*.CPA)" and click twice. This will cause your list of existing ClipAreas to appear in the upper left box, irrespective of what ClipFile they belong to.
- 3. Select the ClipArea** you want to edit and click **OK**. Phonos will then write the data to the waveform views as it would for a WaveFile.

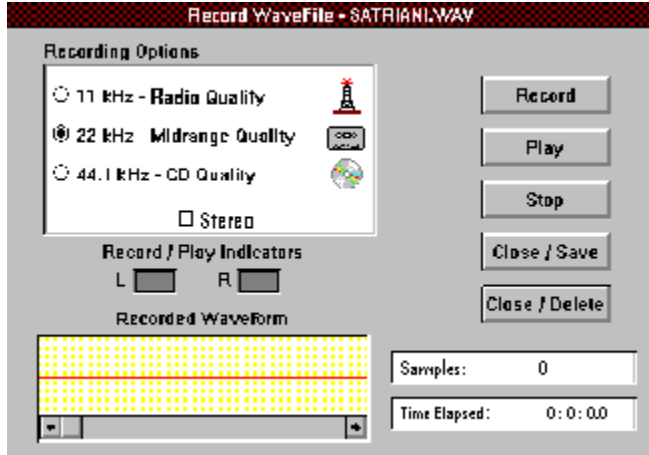
Sorting ClipAreas Into Directories

Since a ClipArea must be stored in a file to ever be selected at all, a place must be made for it if a ClipFile is not already open (and therefore visible) in the ClipFile Window. For this purpose, the "Choose ClipArea Attributes" box appears after you have named an unsorted ClipArea. *If there are already ClipArea names in the ClipFile Window, the sorting is automatic* (and into the open ClipFile).

At this point, you can choose to put your ClipArea anywhere you want to: in or out of Phonos, but within your computer's hard, or internal, drive (drive "c"); or onto a large or small floppy disk (usually drives "a" and "b"). Under normal circumstances, you will want to put the new ClipArea into a directory created in drive "c", so find (using the scroll bar, if necessary) and click with your mouse, "c". This will cause the name of the ClipArea to appear in the ClipFile Window. This does not mean that the ClipArea is in a ClipFile, however; but it must be in one before you exit the current WaveFile, by which time you will have named a ClipFile to hold the new ClipArea(s) on your way out.

Recording Console Controls

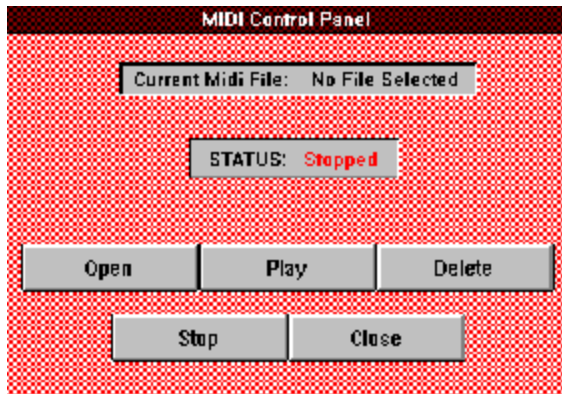
Phonos' Recording Console is where you will do your actual recording. Its elements are a legacy of pre-digital recording technology. To know more, point and click anywhere, as appropriate, in the graphic below. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



MIDI Controls and Indicators

The MIDI Control Panel is an added feature to Phonos. Although the recording of MIDI songs is not supported by Phonos, the MIDI Control Panel has been included so that you may take advantage of playback of MIDI songs through the MIDI Mapper found in the Windows (not MIDI) Control Panel. There are five simple buttons that you can use to load, play, and delete MIDI files.

Use the graphic below to obtain help on each of the MIDI Control Panel Controls. To know more, point and click anywhere, as appropriate. A box of detailed information will come to the screen. Click anywhere in your screen to make it go away.



Use of Phonos Scroll Bars

With a scroll bar you can move through the contents of a window or dialog box too small to show all of its contents. In every scroll bar that you find in Phonos, you can "scroll" using the arrows at either end of the bar to move the scroll thumb, which marks your relative position. Beyond these similarities, they differ in certain ways.

Main Screen (Expanded View)

ClipFile Window

Volume Adjustment Window - (Volume Menu)

Recorded Waveform Window - (Recording Console)

Use of Mouse Buttons

Your left and right mouse buttons are essential editing tools. Much of what your mouse can do is applicable to any program running under Microsoft Windows. Others are specific to Phonos.



Left Mouse Button

1. **Execution of actions** within Phonos by clicking menus, commands, controls; these are general Windows functions.
2. **Highlighting** (with one click) **and selection** (with two clicks) of files from directories; these are also general Windows functions.
3. **Advancement of the starting point** of the playback in the Compressed View. Merely move your cursor to the desired spot and click the left button once. Then, when you click **Play**, the playback will begin from that point.
4. **Delineation of ClipAreas** in the Expanded View. Mark the beginning of your ClipArea by moving the cursor to the desired position and clicking the left button once. Then "solidify" this with the Mrk B Clip button. Then, mark the end of your ClipArea by moving the cursor to the desired position and clicking the left button once. Then solidify this with the Mrk E Clip.
5. **Manipulation of Scroll Bars**, of which there are several in Phonos: the Expanded View, the ClipFile Window (when it contains more than four ClipArea names), the *Increase* and *Decrease* Volume dialog boxes, and the *Recorded Waveform Window* in the Recording Console. For the specifics, see Scroll Bar Controls.
6. **The playback** of ClipAreas. Simply select the ClipArea in the ClipFile Window that you wish to play by pointing and rapidly clicking it twice with your left mouse button. Playback will continue until the entire ClipArea has been played.
7. **Changing** the beginning and ending positions of a marked area in the Expanded View and/or either of the Zoom Windows. If a marked area is visible in the Expanded View, you may "point and click" to the beginning and/or ending position and, while holding the left mouse button down, you may move the cursor to the newly desired sample position. By releasing the mouse button, the marked area is redrawn to display the new change. This process is the same for beginning and/or ending positions in the Zoom Windows.



Right Mouse Button

1. **The toggling between Play and Stop** while your cursor resides within the Compressed View. Your mouse must be pointing within the bounds of the Compressed View Window for this to work correctly.

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Creating ClipFiles

ClipFiles can be viewed as file "folders", which contain 1 or more ClipAreas. ClipFiles allow you to store related ClipAreas together into convenient packages. Use the following steps to create a ClipFile:

1. First, in order to create a ClipFile, you must have already created one or more ClipAreas (see [Creating ClipAreas](#)) and they must be visible in the ClipFile Window. Note that when you choose to create a ClipFile containing ClipAreas, you are referring to those ClipArea names that are currently visible in the ClipFile Window.
2. Next, choose the [Save ClipFile](#) command from the *Clips Menu*. The ClipArea name(s) contained in the ClipFile Window are now saved in the named ClipFile.

SmartDrive and Phonos

SMARTDRIVE is a disk-caching program that is often used with computers that have expanded memory. It speeds the disk access time on most applications, however, it also requires a chunk of memory for itself in order to load and run. It is highly recommended that if you have 3 MB or less of usable memory at "Phonos run time" (when you are executing Phonos from Windows), you shut off the SMARTDRV option that is set through AUTOEXEC.BAT. This will conserve the maximum amount of memory for loading and manipulating WaveFiles. To do this, use any editor, such as NOTEPAD.EXE in Windows or 'EDIT' from the command prompt in DOS. Locate the line that shows "SMARTDRV.EXE..." (or similar) and place a "REM" in front of it. This changes that line to a remark and it will not be read on execution. After doing this, make sure that you exit Windows and reboot your system because AUTOEXEC.BAT is initially read when your computer boots up. To find the amount of usable memory at any time while you are running Phonos, enter Phonos' On-Line Help File (as you are in now), press **F1**, and choose the **About Help** menu item from the **Help Menu**. The free memory is displayed at the bottom in KBs. Convert this number to MBs by dividing by 1024. This is the amount of MBs you have free to work with. This number represents the size of the swap file that Windows uses on your hard drive for data manipulation. For more information on Windows' swap files, see your Windows' documentation.

Phonos Memory Limitations

Because the program must load the current WaveFile into memory before you can play or edit it, Phonos is dependent on not only the amount of hard drive space (permanent memory) you have, but also the amount of RAM (temporary memory) you have. The more RAM, the better and faster performance you will get from Phonos. It is strongly recommended that you have at least 4 MB of RAM. This is becoming a standard industry minimum. Upgrading system RAM is becoming less costly and is easy to do. Phonos will run best on 6 MB of RAM or more. These memory limitations can affect the Purple Line Tracking Indicator and "File Operation In Progress" wait times.

Purple Tracking Inaccuracy (Compressed View)

The tracking of this purple bar, as it moves across the waveform in the Compressed View, is directly based on internal Windows' timers that are called every 1/10 of a second. Windows' timers, without getting too technical, are sent as messages. There can be delays in the sending, based on other activities that are going on in Windows at the same time. If there are several applications open (but minimized to icons) or you are rapidly moving your mouse during playback, you will notice that the purple bar may hesitate or fall short of the end of the WaveFile when playback stops. As a general rule, try to close all applications before using Phonos and try not to move your mouse too much during playback or recording.

"File Operation In Progress" Wait Times

When Phonos is loading, writing, or manipulating a WaveFile over 2 MB in size, the " File Operation In Progress" box appears. The time you must wait is proportional to the length of the WaveFile being written (and the amount of RAM you have). In Phonos, there are three ways to lessen the delay :

1. **Check** the SMARTDRIVE setting in your *AUTOEXEC.BAT* file.
2. **Increase your system memory** (RAM) - consult your local computer store for details.
3. **Record** shorter WaveFiles.

Future versions of Phonos will support smaller disk access times, thereby greatly reducing delays.

DOS Primer

This section explains those few rudiments of the Disk Operating System (DOS) that are specific to using Phonos. It is included for those users who have no knowledge of DOS, but want to get started with Phonos right away, without being told "please consult your DOS Manual."

DOS and Windows manage the storage of your files--including, of course, your audio files. This includes all drives:floppy (a,b), internal (c, etc.), and network, plus the directories they contain. To create these directories on particular drives, you use File Manager, which can be found in your "Main Program Group" in Windows. We strongly encourage you to create individual directories for WaveFiles and ClipAreas/ClipFiles, respectively, so that these files do not wind up scattered throughout your hard (c) drive. Another advantage to this is that you can sort your WaveFiles and ClipAreas/ClipFiles into small and, therefore, *more manageable*, packages, so that you may use them effectively for editing. The DOS file structure can be viewed as a staircase structure. This file structure is explained below.



*This is found in File Manager (at the top of the screen). This shows you the available drives on your system. By pointing and clicking on each drive, its contents are displayed below it. Initially, the **main directories** that reside in the drive that you chose are displayed as shown in the graphic below.*



*Notice in this example the only **main directory** on drive **E** is the **WINDOWS** directory. This represents a "file folder" or package that neatly contains its own **subdirectories** and files.*

msapps	
system	
winfax	
winfish	
vtd.386	6660
windebug.386	5233
win.b~k	9752
progman.bak	587
system.bak	3271
winhelp.bmk	63
redbrick.bmp	630
system.cms	3688
mouse.com	56425
win.com	44170
reg.dat	1813
file_id.diz	238
bwcc.dll	130224
ctres.dll	14080
cvwin.dll	13824
helpk.dll	2304
mciole.dll	8704
moricons.dll	118864

After pointing to and selecting the **WINDOWS main directory** by clicking on it with your mouse, the right portion of your screen displays the **subdirectories** and files that are contained within it. The yellow folders that are shown at the top of the contents represent directories that have their own contents, or rightly-named **subdirectories**. The names next to the clear white folders represent actual files. At this point of the directory structure on drive E, we are at the equivalent point of **E:\WINDOWS**.



Point and click one of the **subdirectories** (**SYSTEM** chosen in this case) on the right side of the screen. You now are able to see the open (**SYSTEM**) folder **subdirectory** under the initial **WINDOWS** directory on the left of your screen. At this point of the directory structure, we are pointing to **E:\WINDOWS\SYSTEM**.

vgacolor.2gr	4484
v7vdd.386	40385
vadlibd.386	5542
vrsd.386	4692
vsbd.386	5650
vsbpd.386	5854
vsndsys.386	6994
vtdapi.386	5245
v7vga.3gr	13824
vga.3gr	16384
msadpcm.acm	22976
midimap.cfg	42894
win.cnf	16112
cpwin386.cpl	104816
drivers.cpl	41440
main.cpl	148560
snd.cpl	19984
sndsysw.cpl	5312
aspman.dll	8288

Now, the subdirectory's (SYSTEM) contents are displayed, just as before with the WINDOWS directory.

As you can see, the DOS filing structure is similar to a staircase. As you move up (or down) each level (levels can be compared to directories), you find a new set of files and subdirectories. When you come to understand the structure, it actually becomes quite simple. With this understanding, first create directories that you will store WaveFiles and ClipAreas/ClipFiles in by using File Manager. Then, when creating WaveFiles or creating ClipAreas/ClipFiles, you can place them into the special directories that you have created.

File Menu

The *File Menu* is used to make the *external* decisions about what to do with WaveFiles that are already in existence. This group of commands has nothing to do with the development---editing, mixing, or adjusting---of WaveFiles. Its use is similar to the use of the "File" menu bar item in most other Windows applications.

Edit Menu

The *Edit Menu* is used to update an existing edit of a WaveFile or to discard the last change you have made. It's use is similar to that of any word processing program's *Edit Menu* item.

Zoom Menu

The *Zoom Menu* contains the two commands that allow you to "zoom in" on the beginning and/or ending positions of a currently marked area. This allows you to make your edits extremely precise by removing "pops" or glitches which would be nearly impossible to remove by using the Expanded View alone.

Clips Menu

The *Clips Menu* contains the commands that relate to that mutable, movable wonder found only in Phonos, the ClipArea. ClipAreas and the bins they are stored in--ClipFiles--enable you to not only edit and work on whole WaveFiles, but *parts* of WaveFiles. Furthermore, there is no limit to how many times you can use a ClipArea, nor to how many WaveFiles you include it in. With the Clips Menu, you name, save, open, close, transfer, mix, change the volume, echo, and discard ClipAreas.

Mix Menu

The Mix Menu contains the commands you will use to perform audio mixing with WaveFiles. *Mixing*, in general, refers to the blending of the current WaveFile with a copy of another WaveFile (or a ClipArea). The echo is a special type of mixing, in that it mixes an audio file not with a copy of another, but with a copy of itself. In order to mix a ClipArea with the currently open WaveFile, you would use the Mix ClipArea With WaveFile command found in the *Clips* Menu.

Mixing is *not* inserting an audio file between the two cut ends of another audio file. That would be a splice, which is an editing, not a mixing task. But it, too, is possible in Phonos.

Volume Menu

The Volume Menu contains your volume adjustment options for the currently open WaveFile. These volume adjustments are non-destructive to the WaveFile, meaning that you may undo changes by using the Undo Last WaveFile Edit command from the *Edit* Menu. If you wish to change the volume of a ClipArea, you would use the Increase ClipArea Volume or Decrease ClipArea Volume commands in the *Clips* Menu.

Midi Menu

Phonos' MIDI feature is a stand-alone bonus to Phonos' editing capabilities, although it is not itself an editing tool. Despite its intimidating name, the MIDI feature is the easiest part of Phonos to use. The MIDI Menu is basically a miniature file menu in that it contains the keys to playing MIDI files or deleting them.

Open WaveFile

The *Open WaveFile* command opens the directory of already-existing WaveFiles, which have a .WAV filename extension. Choose--by typing or by clicking the full name (including the extension)--the WaveFile you want and click **OK**. This causes the WaveFile's visual expression, its *waveform*, to be written to the Compressed and Expanded Views Windows, and its vital statistics to be entered into the Attributes Window. If you open a WaveFile when another is already current (open and visible), then the one you open replaces the other, which is closed (sent back into storage in the directory).

Close Current WaveFile

The *Close Current WaveFile* command closes the WaveFile that is said to be "current" (open and visible on the screen), plus the currently displayed ClipArea(s), if any, in the ClipFile Window. These are sent back to their respective directories, and the Main Screen is blanked. Now you have a clean slate, as if you had just started Phonos.

The *Open WaveFile* command also does all of the above to a current WaveFile, when you use it to open another WaveFile without closing the current one.

Delete WaveFile

The *Delete WaveFile* command summons the WaveFile directory and prompts you to choose--by typing or clicking--the particular WaveFile you wish to delete from any of the directories/drives on your system. This command should be used with caution because once a WaveFile is deleted, you will not be able to retrieve it. Its benefit comes in clearing unwanted WaveFiles from your hard disk, thereby conserving space and making the remaining WaveFiles easier to find.

Save Preferences

The *Save Preferences* command is used to choose the recording options that you *prefer* as defaults (automatic settings).

You may configure the sampling rate and number of channels in the Recording Console with *Save Preferences*. Every time you start Phonos, the options you chose and saved will be preset in the Recording Console to the options indicated. To change the configuration, simply reselect the options and choose *Save Preferences* again. If you never use this command, then Phonos will automatically start with a setting of 11 kHz/mono in the Recording Console.

Exit

The *Exit* command is self-explanatory. Aside from the external *Close* command in the Windows command box in the far upper left corner of the Phonos screen, *Exit* is the only way to terminate a Phonos session. It returns you to the Windows Program Manager to work in other applications. You may only use the *Exit* command when Phonos' Main Screen is visible. While in the Recording Console, the MIDI Control Panel, or within one (or both) of the Zoom Windows, you must use a **Close**, **OK**, or **Cancel** button to return you to the Main Screen in order to use the *Exit* command.

Open ClipFile

The *Open ClipFile* command opens a directory of pre-saved ClipFiles, each of which has a filename extension of .CPF. A ClipFile is a named group of one or more ClipAreas (filename extension .CPA). For instance, one named STOOGES.CPF may contain LARRY.CPA, MOE.CPA, and CURLY.CPA. These can be opened separately as WaveFiles, but the usual route is to open them as a group (a ClipFile) with *Open ClipFile*. When the "Open ClipFile" Window opens, you are prompted to choose--by typing in or clicking--the desired ClipFile from a list of directories/drives. After making your choice and clicking **OK**, the ClipFile's inventory of ClipAreas appears in the ClipFile Window and its caption bar will display the ClipFile's name. If you choose this command when a ClipFile is already open (visible in the Waveform Views), Phonos will simply close the open ClipFile and open the newly selected one.

Close ClipFile

The *Close ClipFile* command is very similar to the *Close Current WaveFile* command. Use it to close (send back to the directory) an open ClipFile and to blank the ClipFile Window. This makes room for another ClipFile from which to select ClipAreas to use with the current WaveFile.

Save ClipFile

The *Save ClipFile* command tells Phonos to save, or, more precisely, to *update* the contents of the open ClipFile. If you have added ClipAreas since opening it, you must resave it before you close it, which happens if you select one of several commands that will directly or indirectly close the ClipFile: *Close ClipFile*, *Close Current WaveFile*, *Open WaveFile*, or *Exit*. If no ClipFile is open and you have at least one new ClipArea in the ClipFile Window, that you want to save into a ClipFile, clicking *Save ClipFile* summons a dialog box that prompts you to name the ClipFile that will hold the new ClipArea(s). Its path (drive and directory) was already determined when you created (named) the first ClipArea (see [Name Marked Area](#) for details on how to do this). You do *not* have to add the *.CPF* filename extension; Phonos does it for you. Just type in a name and click **OK**. The ClipFile will be saved and the caption bar of the ClipFile Window will display its name.

Delete ClipFile

The *Delete ClipFile* command is very similar to the Delete WaveFile command. It summons the "Delete ClipFile" Window, where you specify the ClipFile to be deleted from whatever drive/directory it is in. After choosing the ClipFile name and clicking **OK**, the selected ClipFile is deleted along with all that it contained. Use this command with caution; deletions are *permanent!* This command allows you to clear your hard drive of unneeded ClipFiles, freeing up hard drive space.

Name Marked Area

The *Name Marked Area* command is the tool you use to convert a marked area into a proper ClipArea. The marked area is a blackened region of a WaveFile made with the Mrk B Clip and Mrk E Clip buttons. The command opens the "Name Marked Area" dialog box. Type in a name of up to eight letters, *without* an extension. (Phonos automatically adds the .CPA extension).

If the ClipArea you are creating is added to an empty ClipFile Window, you must choose the directory/drive that the ClipArea is to be stored in. The "Choose ClipArea Attributes" dialog box appears, with its list of available drives and directories in which you can place the new ClipArea. The path shown directly under the text "Current Path" is where you are telling Phonos to place the ClipArea. This changes as you choose different paths by pointing and clicking on various drives/directories in the listbox. Once you are satisfied with the path shown below the text "Current Path", click **OK** and the ClipArea's name will appear in the ClipFile Window. The filename extension, .CPA, is not shown. All subsequent ClipAreas that you create will be saved to the same path as the first. This is so that when you save them all in a ClipFile, they will all be in one convenient package, together in the same drive/directory. The ClipFile, when named, will also reside in the same drive/directory.

Clear Marked Area

The *Clear Marked Area* command erases or "clears" a black mark from the Waveform Views that you decide *not* to make into a ClipArea, for whatever reason. The command should not be confused with the Delete Marked Area command, however.

Clear Marked Area simply removes the "mark" from the "area." (The *Delete Marked Area* command removes both.) The waveform remains unaffected by the *Clear* command. Suppose you have marked one area, but decide you want to mark another instead. Choose *Clear Marked Area*. Another method of erasure includes using the Trans Cursor button in the Manipulation Controls Window.

Delete Marked Area

The *Delete Marked Area* command cuts a segment out of the current WaveFile that is delineated by the black (marked) area. It could be compared to taking a piece of audio cassette tape, cutting a section out, and splicing the ends back together. This is unlike the Clear Marked Area command which removes only the mark, not the area under the mark.

Insert ClipArea

The *Insert ClipArea* command painlessly splices a ClipArea into the current WaveFile at a black line that you placed in the Expanded View to mark the desired position of insertion. It is a very different procedure from the messy, inexact cutting and splicing that were necessary with reel tapes. In some sense this command is the opposite of the Delete Marked Area command, which extracts rather than inserts.

To perform an insertion, you must first tell Phonos which ClipArea you want to insert by highlighting it in the ClipFile Window. Then tell Phonos *where* to insert it into the current WaveFile (by marking with the black-line cursor, as explained above) and execute the insertion with the command. The current WaveFile will expand in size with the addition of the ClipArea; this expansion will be registered in the ***Space Occupied On Drive*** line in the ***WaveFile Attributes Window*** and in the total time in the yellow time indicator bar in the Compressed View.

Delete ClipArea

The *Delete ClipArea* command is easily confused with the Delete Marked Area command. The former removes a ClipArea in the ClipFile Window, and the latter removes a marked, unnamed segment from the current WaveFile.

To delete a ClipArea, point to and click its name (only once) in the ClipFile Window. Then, execute the deletion with *Delete ClipArea*.

Mix WaveFile

The *Mix WaveFile* command allows you to mix the contents of a pre-recorded WaveFile with the current one. First, click a black line at the mixing point (in the Expanded View) from which the mixing will proceed. Then use the *Mix WaveFile* command to execute the mixing. The command opens the "Mix WaveFile" Window in which you select from any directory/drive on your system the WaveFile you will mix with the current one. When you have clicked the one you want, press **OK**. If the length of the introduced WaveFile exceeds the end of the current one, mixing stops at the end of the open WaveFile.

This action creates a temporarily mixed WaveFile, which you can continue to edit, while leaving the original intact. This WaveFile action is thus *non-destructive*. To make the mixing permanent, you must save it with the *Save New WaveFile* command, found in the **Edit** Menu.

Mix ClipArea With WaveFile

With the *Mix ClipArea With WaveFile* command, you can mix a copy of any ClipArea in the open ClipFile with the contents of the current WaveFile. The first step, naturally, is to select the desired ClipArea by highlighting it.

Now, click a black line at the point (in the Expanded View) from which the mixing will proceed. Then use the *Mix ClipArea With WaveFile* command to execute the mixing from the specified point.

This action creates a temporarily mixed WaveFile, which you can continue to edit, while leaving the original intact underneath it. This WaveFile action is thus *non-destructive*. To make the mixing permanent, you must save it with the *Save Mixed WaveFile* command in the **Edit** Menu.

Echo Current WaveFile

The *Echo Current WaveFile* command takes the current WaveFile and mixes it with itself, though very slightly advanced, to create the echo effect. This is called *automatic echo* and is one of two ways to echo a WaveFile.

The other method of echoing, which is called *manual echo* makes use of the *Mix WaveFile* command to control the advance of the echo (have the echo begin at some point other than the one Phonos automatically begins it at with the *Echo WaveFile* command). Select the starting point, as you would with a regular mixing operation, and choose the *Mix WaveFile* command. When the directory comes up, select the same WaveFile that is *already* current. Clicking **OK** executes the manual echo (which is in fact a form of custom-point mixing).

This action creates a temporarily mixed WaveFile, which you can continue to edit, while leaving the original intact underneath it. To make the mixing permanent, you must save it with the *Save New WaveFile* command, found in the *Edit* Menu.

Echo ClipArea

The *Echo ClipArea* command adds an echo to a selected (highlighted in the ClipFile Window) ClipArea. Use it carefully because echoing a ClipArea is *destructive*, meaning that once you echo the ClipArea, you have lost the original, un-echoed version. (Because ClipAreas are generally small, it is possible--and even recommended if their total length is considerable--to back them up into another directory or onto a floppy disk before choosing this option, in case you want to retrieve the original.)

Begin by selecting the ClipArea you want to echo by pointing to its name in the ClipFile Window and clicking its name (in the open ClipFile) once. Choosing the *Echo ClipArea* command at this point executes the echo. Next, listen to the echoed ClipArea by double-clicking its name in the ClipFile Window.

Increase WaveFile Volume

The *Increase WaveFile Volume* command opens a dialog box in which you use a scroll bar to raise the volume of the current WaveFile by any desired percentage. The entire WaveFile is affected. This command does not increase the volume setting on your sound card, only the volume of the file you are working with.

There is an important difference in using this command to adjust the volume of a WaveFile as opposed to a ClipArea. Any adjustment to a WaveFile is temporary and can be previewed before being made permanent with the *Save New WaveFile* command in the **Edit** Menu.

Decrease WaveFile Volume

The *Decrease WaveFile Volume* command opens a dialog box in which you use a scroll bar to lower the volume of the current WaveFile by any desired percentage. The entire WaveFile is affected. This command does not decrease the volume setting on your sound card, only the volume of the file you are working with.

There is an important difference in using this command to adjust the volume of a WaveFile as opposed to a ClipArea. Any adjustment to a WaveFile is temporary and can be previewed before being made permanent with the *Save New WaveFile* command in the **Edit** Menu.

Increase ClipArea Volume

The *Increase ClipArea Volume* command presents you with an "Increase Volume" box. By using the contained scroll bar, you may choose a certain percentage that you wish to increase the volume by. The ClipArea you are manipulating is the currently selected one in the ClipFile Window. Use caution when implementing this command; volume changes to ClipAreas are destructive, meaning that they are automatically overwritten.

Decrease ClipArea Volume

The *Decrease ClipArea Volume* command presents you with an "Decrease Volume" box. By using the contained scroll bar, you may choose a certain percentage that you wish to decrease the volume by. The ClipArea you are manipulating is the currently selected one in the ClipFile Window. Use caution when implementing this command; volume changes to ClipAreas are destructive, meaning that they are automatically overwritten.

Undo Mrk B Clip

The *Undo Mrk B Clip* command gives you the flexibility of "starting over" a marked area that you had begun. If you have marked a beginning position in the Expanded View using the Mrk B Clip button found in the *Manipulation Controls Window*, and you decide that you want to change the beginning position, you may do so by selecting this command.

MIDI Control Panel

The *MIDI Control Panel* command takes you from Phonos' Main Screen to the MIDI Control Panel Screen, where you can playback MIDI files through a friendly interface.

Delete MIDI File

The *Delete MIDI File* command opens a directory in which you can specify a deletion of an existing MIDI File from your hard disk if you do not want it taking up space. If you click **OK**, a warning box reminds you that the deletion is irreversible.

Zoom Marked Left

This command displays a "zoomed in" view of the *Mrk B Clip* position that you chose when you created a marked area. You are able to see the current position in detail, so that you may make a precise edit in that small area. You may only use this option when the beginning mark position is visible in the Expanded View. If it is not visible, simply use the Expanded View's scroll bar to move the position into view.

Zoom Marked Right

This command displays a "zoomed in" view of the *Mrk E Clip* position that you chose when you created a marked area. You are able to see the current position in detail, so that you may make a precise edit in that small area. You may only use this option when the ending mark position is visible in the Expanded View. If it is not visible, simply use the Expanded View's scroll bar to move the position into view.

Undo Last WaveFile Edit

This option allows you to revert back to the previous edit, if any, that you had before you performed a mix, an insertion, a deletion of a marked area, a volume change of the current WaveFile, or an echo of the current WaveFile. For example, you open a WaveFile and perform a volume change to it. You may undo the volume change, which will revert you back to the original copy by using this command. You may perform up to three edits without updating the file.

Save New WaveFile

This option allows you to save the current edit level that the WaveFile is at. Use caution when implementing this command; this will permanently alter your original WaveFile. You may use this command between any edit you have made. For example, you open a WaveFile, mix another WaveFile, insert a ClipArea, and decide that you want to save that version. Choose this command at this time and your original version will be overwritten with the new edited version.

Mrk E Clip Button

Use the **Mrk E Clip** to specify the end of a ClipArea that you plan to create. You must previously have marked the beginning point with the **Mrk B Clip** button.

Mark the end point by clicking a black line into the Expanded View with your mouse. Then, click the **Mrk E Clip** button. The area between the specified beginning and ending points will be blackened, forming a "marked area" of the current WaveFile's waveform.

Since the newly marked area is in fact a pre-named ClipArea, you can preview it with the **Play Marked** button in the Manipulation Controls. If it is unsatisfactory, you can erase it with the Clips Menu's *Clear Marked Area* command. Or, you can convert it to a ClipArea with the Clips Menu's **Name Marked Area** command.

Play Button (Manipulation Controls Window)

The Main Screen's **Play** button plays the current WaveFile from the position marked by the vertical black line. Normally, this is from the beginning of the WaveFile. However, you can resume from anywhere in the WaveFile you previously stopped at (using the **Stop** button) by clicking the **Set Start** button before resuming with the **Play** button. Or, you can begin at an entirely different point altogether by clicking a black line anywhere in the Compressed View.

You may also use your *right* mouse button to start playback, wherever your black-line cursor is within the Compressed View Window.

Loop Play Button

Use the **Loop Play** button to initiate cyclical repetitions of the current WaveFile. The first cycle begins from the location of the black line. Use this feature to do multiple, automatic previews of the WaveFile while you watch the purple tracking indicator.

With the loop play function, you can quickly zero-in on a precise location and edit it, delete it, etc. In this way, a combination of Phonos' features takes out the guesswork and the endless switching that was necessary for pre-digital editing.

Rev Clip Button

The Reverse Clip feature plays the selected ClipArea in reverse. It has nothing to do with the current WaveFile, nor does it have any purely practical uses.

Select the ClipArea you want to hear in reverse by highlighting it in the open ClipFile. Then, click **Rev Clip**.

Set Start Button

The Set Start feature allows you to resume playback from the position in a WaveFile that you last stopped at. In other words, after you stop the reel motion with the **Stop** button, and want to resume from the same point, mark it with **Set Start** before resuming with **Play**.

During playback, the purple tracking indicator moves across the waveform. When you click Stop, the purple that was drawn across the waveform disappears, except for the ending position. Because this ending position marks the point where playback terminated, you can make the next playback operation start from that position with **Set Start**.

Trans Cursor Button

The Trans Cursor button is a Phonos exclusive, a tool that makes your editing time very efficient. It instantaneously makes the black-line cursor in the Expanded View agree with the position of the black-line cursor in the Compressed View. This means you do not have to pinpoint the desired location with guesswork and endless scrolling and trolling. When the black line cursor is in the approximate area you want to work on in the Compressed View, click **Trans Cursor** to arrive at the corresponding part of the Expanded View. *Phonos does the scrolling and trolling for you in a matter of milliseconds!*

Note the time position of the black-line cursor in the Compressed View by looking at the tick marks on the yellow time-scale indicator. Next, click the **Trans Cursor** button and the Expanded View will shift the waveform to display a black line cursor at the corresponding position in time, except that the tick marks will be in smaller units, allowing for ultra-precise editing.

Mrk B Clip Button

Click **Mrk B Clip** to specify the beginning of a ClipArea that you plan to create. Mark the point by clicking a black line into the Expanded View with your mouse. Then, click the **Mrk B Clip** button.

The next step, naturally, is to delineate the end of the marked area, in similar fashion, using the **Mrk E Clip** button.

Play Marked Button

The **Play Marked** button plays back a marked area, or a pre-named ClipArea, that you have created in the Expanded View. Because this marked area is visible in the Compressed View, the playback's start position jumps to the beginning of the black marked area and the purple tracking indicator starts movement from there to the end of the marked area. The Play Marked feature is essentially a previewing tool, to decide if a marked area is worth converting to a proper ClipArea.

This button plays back only the *marked area* in the Compressed and Expanded Views. For playback of ClipAreas listed in the ClipFile Window, simply point to them and double-click it with your left mouse button.

Stop Button (Manipulation Controls Window)

Clicking the **Stop** button halts playback initiated with any of the following controls: the Play button, the Loop Play button, and the Play Marked button.

An alternative method of stopping playback, at least in the case of a WaveFile, is to click your right mouse button anywhere within the Compressed View during WaveFile playback.

FF Button

The Fast Forward control advances the black line cursor in small jumps (not continuously, as with a true reel) in the Compressed View to a new position. If **FF** is clicked during playback, reel motion ceases and restarts at the new, forwarded position. If the control is used when there is no reel motion, the black line cursor is merely moved forward.

Record Button (Manipulation Controls Window)

The **Record** button in the Manipulation Controls is the first step to recording a new WaveFile. It is not, however, a live switch; it starts no reel motion. Instead, it opens the "Record WaveFile As..." Window, in which you choose the directory, drive, and filename. After this, click **OK** from this box, and the Recording Console will appear and the name you have given to the new WaveFile is displayed at the top. The **Record** button in the Recording Console is that which initiates reel motion.

Rew Button

Click this button to backup the *black line cursor* in the Compressed View to a new position in the WaveFile. When using this button during playback, playback is stopped and restarted at the new backed up position. If this button is used when playback is stopped, the black line cursor is simply backed up to the new position.

11 kHz Checkbutton

The 11 kHz checkbutton sets a recording sampling rate of 11 kHz ("radio quality"). Sampling rate can be compared to your printer's "dots per inch" level. The more dots that the printer can put in a character (e.g., a letter), the smoother and more natural it will look. At 11 kHz, you are instructing Phonos to use roughly 11,000 "dots" of the incoming sound per second. Radio quality (11 kHz per second) uses the least amount of disk space, but also yields the "roughest" quality, like a letter made with too few dots. When you click the Record button, the sampling rate will be set to 11 kHz and recording will begin.

22 kHz Checkbutton

The 22 kHz checkbutton sets a recording sampling rate of 22 kHz ("cassette quality"). Sampling rate can be compared to your printer's "dots per inch" level. The more dots that the printer can put in a character (e.g., a letter), the smoother and more natural it will look. At 22 kHz, you are instructing Phonos to use roughly 22,050 "dots" of the incoming sound per second. Cassette quality (22 kHz per second) uses an intermediate amount of disk space, but also yields an "intermediate" (or "midrange" quality). When you click the Record button, the sampling rate will be set to 22.05 kHz and recording will begin.

44 kHz Checkbutton

The 44 kHz checkbutton sets a recording sampling rate of 44.1 kHz ("CD quality"). Sampling rate can be compared to your printer's "dots per inch" level. The more dots that the printer can put in a character (e.g., a letter), the smoother and more natural it will look. At 44.1 kHz, you are instructing Phonos to use roughly 44,100 "dots" of the incoming sound per second. Cassette quality (44.1 kHz per second) uses the most amount of disk space, but also yields the finest quality. When you click the Record button, the sampling rate will be set to 44.1 kHz and recording will begin.

Stereo Checkbox

The Stereo checkbox, when clicked on (with an "x"), orders a stereo setting for the WaveFile you are about to record. Stereo uses double the samples per second than the mono, or unchecked setting, uses. Samples can be compared to your printer's "dots per inch" level. The more dots that the printer can put in a character (e.g., a letter), the smoother and more natural it will look. Stereo recording uses the extra "dots" to improve the sound quality with subtle audio separations, yet it takes up twice the amount of disk space. To record in mono, simply uncheck the box so that it is empty (without an "x").

Record/Play Indicators

The Record/Play Indicators are two digital "lights" that indicate reel motion in your Recording Console. The Record button turns them red, indicating (in true studio fashion) that recording is in progress. The Play button turns them green, the color traditionally associated with playback. Stopping the reel motion with the Stop turns the lights off. There are two lights, instead of one, to represent the two channels of stereo; however, in Phonos, both lights go on for the mono setting as well..

Recorded Waveform View

This box displays a small waveform of the entire, newly recorded WaveFile. Phonos does not draw this waveform in *real* time, meaning that the waveform is drawn in this window only *after* recording has stopped, and not during recording. This waveform can be played back but not be edited here. It is only as a visual and playback tool.

You may use this mini-waveform to preview the newly recorded WaveFile from any point within it by moving the scroll thumb to where you want to start and clicking the **Play** button. This operation, however, is done with much more precision in the Main Screen.

Recorded Waveform Scrollbar

After recording a WaveFile, a cameo version of its waveform is written in a tiny window in the Recording Console. With its scroll bar, you can move through and inspect the waveform (only part of the WaveFile is visible). You may move the scroll thumb (by clicking on either side of it or with the two arrows) to any position and initiate playback with the Play button.

The point of the Recorded Waveform and its scrolling capacity is that they allow you to listen to any part of the newly-recorded WaveFile, instead of all of it from the very beginning.

Record Button (Recording Console)

This Recording Console's **Record** button is the live switch that starts the recording process. The Record/Play Indicators will turn red and both the Samples and the Time Elapsed indicators will begin metering as Phonos writes the data to the file that you named before entering the Recording Console.

Play Button (Recording Console)

The Recording Console's **Play** button is used to preview a freshly recorded pre-saved WaveFile. In studio fashion, it turns the Record/Play Indicators green. Use it to determine whether or not you want to (1) save and open it to the Main Screen, (2) re-record it, or (3) close the Recording Console without saving the new file. Playback commences from the marked (with the scroll thumb) position in the small Recorded Waveform Window Scrollbar.

Stop Button (Recording Console)

The **Stop** button serves two functions in the Recording Console.

First, it terminates the recording session (red lights). When you have recorded all that you want, click **Stop**. The WaveFile is written to disk and the Record/Play Indicators go out..

Second, the **Stop** button halts playback (green lights).

Close/Save Button

Use the **Close/Save** button to save the new WaveFile--if you are satisfied with it--as you exit the Recording Console. It will be opened in the Main Screen just as if you selected an existing WaveFile with the File menu's Open WaveFile. You may then begin editing your new WaveFile without delay.

Close/Delete Button

Use the **Close/Delete** button to exit the Recording Console and return to the Main Screen without the WaveFile you recorded, which is automatically deleted from the temporary menu. No WaveFile, therefore, will be opened and written to the Waveform Views; it will be as if you just started Phonos.

Samples Indicator

The Samples Indicator shows the amount of samples (recording units) that the currently recording WaveFile uses up. It is something like an odometer for your recording session. Consequently, when you stop recording, this indicator also stops. Use the amount to budget your available hard-disk space. The *rate* at which samples are used depends on the sound quality and number of channels you chose in the Recording Console.

Time Elapsed Indicator

This Time Elapsed Indicator shows the length, in time, of the WaveFile as you have recorded it so far. It is a type of chronometer, measuring in minutes, seconds, and hundredths of seconds. Consequently, when you stop recording, this indicator also stops.

Current Midi File Indicator

The Current MIDI File Indicator tells you what MIDI file is selected or playing, in much the same way that a jukebox indicates the song it is playing or about to play.

Status Indicator

The MIDI Status Indicator flashes a green *Playing* during MIDI playback or a red *Stopped* before or following MIDI playback.

Open Button

This button summons a DOS window showing the various drives/directories in which MIDI files (.MID or .RMI) can be found. Choose a MIDI file and click **OK**.

Play Button (MIDI Control Panel)

The MIDI Control Panel's **Play** button plays the MIDI file named in the Current Midi File slot. If playback is stopped using the Stop button and then restarted with **Play**, the file will restart from the beginning.

Delete Button (MIDI Control Panel)

The MIDI Control Panel's **Delete** button irreversibly erases any *currently loaded* MIDI file from your hard drive. Do not confuse this control with the MIDI Menu's Delete MIDI File command.

The **Delete** button deletes the currently open MIDI file; the Menu's *Delete* command lets you choose MIDI files from your hard drive/directories for deletion. Use both with restraint; once you delete a MIDI file, it cannot be retrieved.

Stop Button (MIDI Control Panel)

The MIDI Control Panel's **Stop** button terminates MIDI file playback and changes the status to *Stopped*.

Close Button (MIDI Control Panel)

The MIDI Control Panel's **Close** button is the only way to exit the MIDI Control Panel and return to the Main Screen. Use it when you are finished playing MIDI files.

Black Line Cursors and Positions

The use of Black Line Cursors in the Compressed and Expanded Views is essential to editing and mixing in Phonos. For more a detailed explanation, click the items below.

[Compressed View](#)

[Expanded View](#)

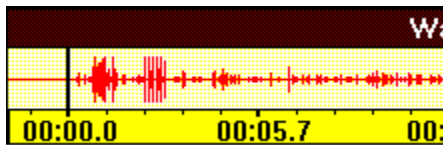
Black Line Cursor - Compressed View

The Compressed View is a profile of the entire WaveFile, so you can see, even if only "from a distance" any point in the WaveFile at any time. When the waveform first appears in the two Views, the black line cursor will be at the beginning, on the far left at the start of the file. Clicking Play, will therefore initiate playback from the beginning of the WaveFile.

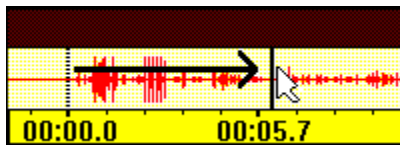
To start playback from another point within the file, move the black line cursor to the desired spot and click once with your left mouse button. The black line will instantly shift from the beginning of the WaveFile to the chosen position. Click **Play** to initiate playback at that point.

The Rew and FF buttons also move the black line cursor, though not continuously (like their cassette recorder counterparts). You can also see the black-line cursor shift when using the Set Start button. Too, the cursor shifts when you use the Play Marked button.

Use the graphics below for a demonstration for the black line cursor movement in the Compressed View.



This is the position that the cursor is in when you first open the WaveFile.



After clicking your mouse in a new position, the original cursor is erased and redrawn at the newly selected position.

Black Line Cursor - Expanded View

The use of the black line cursor in this view is essential for editing sound in Phonos. Unlike the cursor in the Compressed View, this cursor serves multiple purposes, as detailed below.

1. Marking an area (name a ClipArea or delete from the WaveFile)

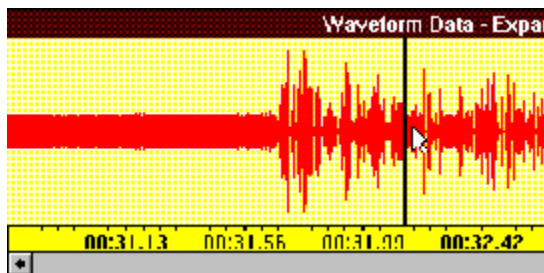
Point and click the desired beginning of the marked area. A black-line cursor will appear. Freeze this beginning position by clicking the Mrk B Clip button. Then point and click the desired end of the marked area. A second black-line cursor marks this point. Freeze this ending position by clicking the Mrk E Clip button. The now delineated marked area is suddenly blackened. Now, you may either name that marked area to save it as a ClipArea or you may delete it from the WaveFile.

2. Inserting and Mixing

Point and click the position where you want an insertion to take place, or a mixing to begin. A black-line cursor will appear.

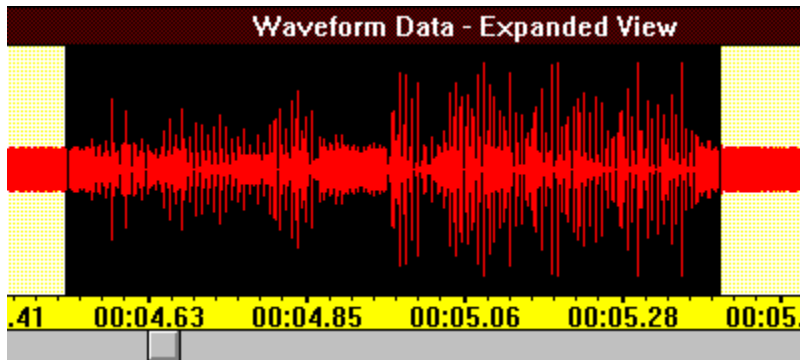
3. Transferring a position from the Compressed View

To view, close up in the Expanded View, the area around the Compressed View, click the Trans Cursor button. The waveform in the Expanded View shifts to show the position of the black-line cursor in that View.

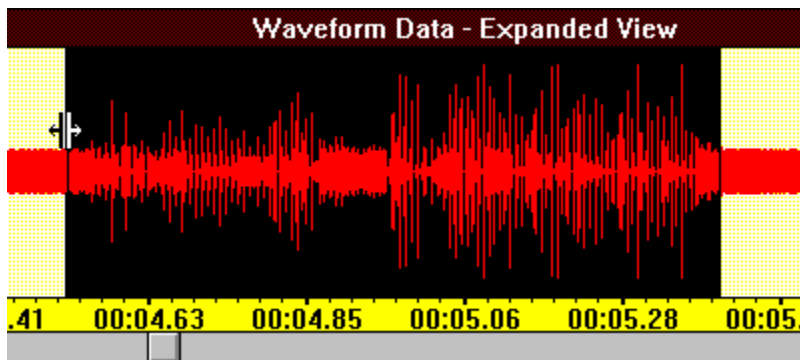


Adjusting Marked Areas

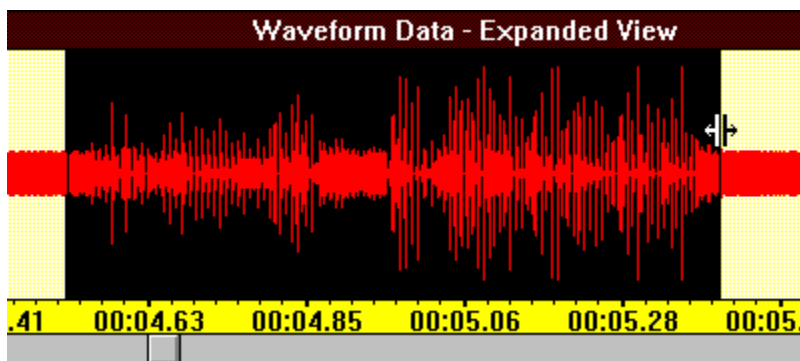
An included bonus to Phonos' editing capabilities is the ability to *adjust* a marked area that you created by using the [Mrk B Clip](#) and [Mrk E Clip](#) buttons. If a marked area is visible in the Expanded View and the beginning and/or ending positions is also visible, you may "click and drag" the beginning or ending positions to adjust the starting and ending points of the area. For a detailed example, see the graphic below:



First, start with a marked area in the Expanded View.



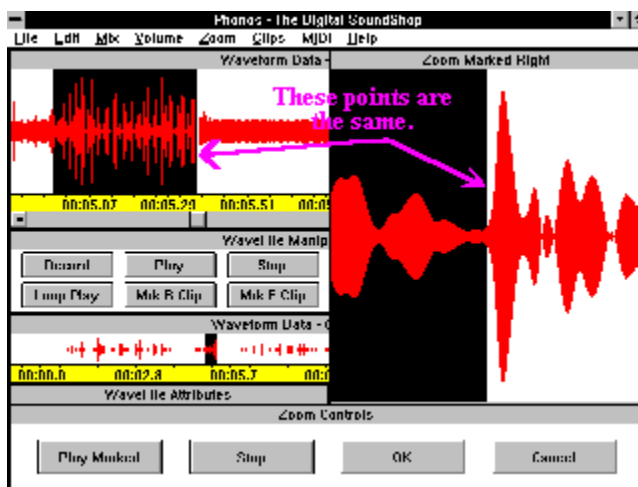
To adjust the beginning point, point to the beginning mark position, and press down with your *left mouse button*. While holding the button down, move your mouse to the newly desired sample position. Then release the mouse button. The marked area will now reflect the new position.



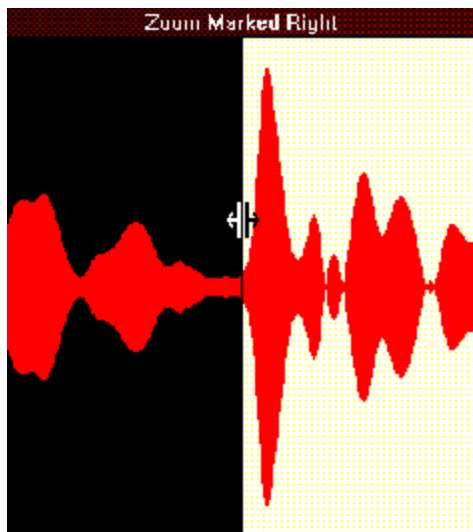
The same holds true for adjusting the ending position. Note: To adjust either position, the beginning and/or ending points must be visible.

Adjusting Zoom Positions

When a marked area is on the screen, you may want to have the ability to more precisely change the beginning and/or ending edit points than by using the Expanded View. For example, if you want to remove a "pop" or glitch which you cannot see in the Expanded View, you may choose to "zoom in" on that position. When choosing Zoom Marked Left or Zoom Marked Right from the **Z**oom Menu, the beginning and/or ending position must be visible in the Expanded View, respectively. If visible, the respective window appears. If the left option is chosen, you see half of the window "blacked out" from the center to the right, indicating the beginning of the marked area. Likewise, if the right option is chosen, you see half of it's window "blacked out" from the far left to the center, indicating the ending of the marked area. You are now able to see in great detail the samples that surround the beginning and/or ending positions in the Expanded View. As with the Expanded View, you are able to "point and drag" this sample position in each of the zoom windows to adjust it's position. For a detailed example, see the following graphic:



Notice the corresponding positions and samples that surround the ending mark in the right zoom window.



You may then adjust the position by "pointing and clicking" with your left mouse button. Hold the button down and move it to a new position. Release the button and see the area in the zoom window redrawn.



Test the new marked area by pressing *Play* in the Zoom Controls Window. Playback can be stopped by pressing *Stop*. If you are satisfied with the new position, press *OK*. If not, you can continue to edit, or press *Cancel* to cancel the zoom operation.

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Creating WaveFiles

A WaveFile is like a document that is first written and then rewritten as many times as necessary to arrive at the polished, finished product. Each revision, from first to final, is called, of course, a draft. In the same way, WaveFiles are drafts, but they are recorded rather than written. Most of what Phonos is about is the editing of these audio "drafts."

However, before the editing, or "rewriting," can proceed, the original must be made. The procedure is easy and is patterned on the familiar cassette player. To create your first draft of a WaveFile, you start from the Main Screen and follow these simple steps:

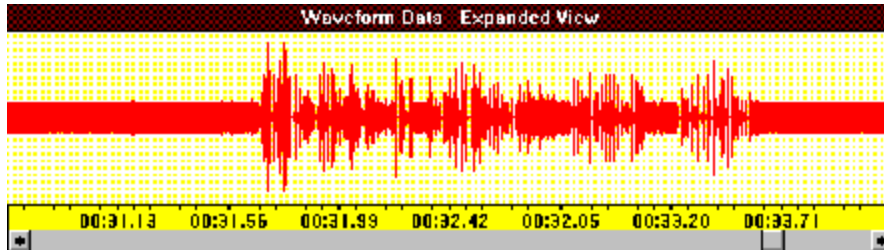
1. Click the Record button - (the "Name WaveFile As..." window appears).
2. Give the WaveFile a name, by typing up to eight characters. Press **OK** - (the Recording Console Appears).
3. Click the Record button to activate the actual recording function. The red lights indicate that a WaveFile is being recorded.
4. Click the Stop button to stop the "reel motion." Your WaveFile now exists in a temporary file on your hard drive.

Was that not simple? To test and keep this first WaveFile draft, you should test it at least once and then save it, as per the next two steps.

5. Playback your WaveFile with the Play button. The green lights will go on as the newly created WaveFile is played back.
6. Save or delete your WaveFile with the Close/Save or Close/Delete button, respectively. If you elect to save, the Main Screen will appear and your new WaveFile will be opened just as if you had chosen the Open WaveFile command from the **File Menu**. It is now ready to be edited into the next draft. If you elect to delete, the WaveFile is erased and you are returned to the Main Screen with no current WaveFile open.

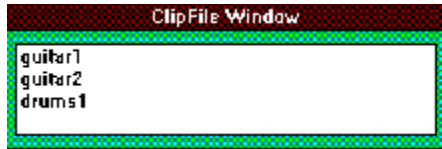
Main Screen Scroll Bar - Expanded View

This scroll bar, found at the base of the Expanded View Window, is used to move you through the current WaveFile waveform. Because the Expanded View Window displays a "zoomed in" view of a section of waveform at any one time, you need a method of shifting that waveform so you may see and be able to edit different sections. The scroll thumb may only be moved by using the far left and right arrows. This limitation requires you to move through the waveform in small increments, which can seem to be a long process if the current WaveFile is lengthy. However, you may make a long jump to another location in the waveform by using the Trans Cursor button in the *Manipulation Controls Window*.

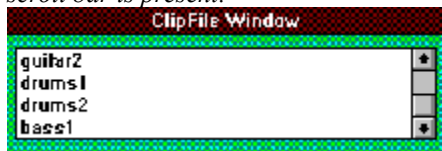


ClipFile Window Scroll Bar

The scroll bar in this window is dependent on the number of ClipArea names that are present in the ClipFile Window. If you are running Windows in VGA mode (640 x 480), up to four ClipArea names will fit within the ClipFile Window before a vertical scrollbar is visible. To accommodate five or more ClipArea names in this window, a vertical scroll bar appears that you can use to scroll through names that are not visible.



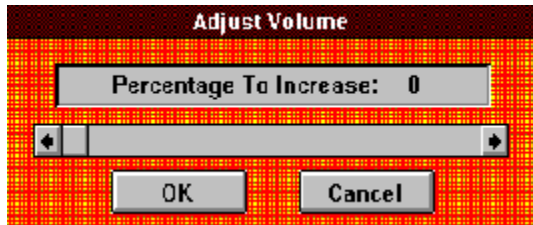
Notice that since there are only three ClipArea names in the window, no vertical scroll bar is present.



This is the same list with 2 extra ClipArea names - which adds a vertical scroll bar so you may see all names in the window.

Volume Adjustment Window Scroll Bar

This scroll bar is used to adjust the percentage of volume increase or decrease. This scroll bar can be moved in three different ways. First, you can use either of the arrows on the ends of the scroll bar to increment (or decrement) the percentage by 1 unit at a time. Second, you can point to the scroll thumb and, while holding your *left mouse button* down, you can drag the scroll thumb to the right or left to increase (or decrease) the percentage by 1 unit on each movement. Third, you can point and click with your *left mouse button* anywhere within the scroll bar and the percentage will increase (or decrease) by 10 units per click.



Attributes Window Elements

This window describes certain quantifiable characteristics, or "attributes," of the current WaveFile. It is an indicator window only, showing the results of the manipulations you have performed and the parameters you have set. Use the graphic below to obtain help on each of the Attributes Window Elements. Simply point and click on the desired item to receive detailed information.

WaveFile Attributes	
WaveFile Name:	RHMARX3.WAV
Space Occupied on Drive:	222000 bytes
Sampling Rate:	22.05 Khz
Bits Per Sample:	8
No. of Channels:	1 (Mono)

WaveFile Name

This line shows the name of the current WaveFile, including the extension, which will be .WAV or .CPA (if you opened a ClipArea as a WaveFile).

Space Occupied On Drive

This line shows the size, in bytes, of the currently open WaveFile; in this case, 222,000. This number represents the amount of hard disk space that the WaveFile takes up.

Attributes Sampling Rate

This line indicates the sampling rate selected (in the Recording Console) for the current WaveFile. A sampling rate is the number of "snapshots" (units of reel space, essentially) that are taken per second of recording. In this case, the cassette quality, which takes about 22,050 "snapshots" per second, was selected. The quotient you get by dividing the number on the line above (Space Occupied) by this number is, therefore, the length of your WaveFile in *time*. This WaveFile, then, is about 10 seconds long. If, however, two channels were selected (stereo option) instead of one (mono) as is the case here, you would have to further divide by two to get (in this case) a WaveFile with a duration of about five seconds. A more direct way of knowing WaveFile length, of course, is to simply look at the "end of the ruler," so to speak, which lies in the *yellow time indicator bar* under the Compressed View.

Bits Per Sample

This line indicates the number of bits per sample that are used by your sound hardware during recording. It will be either 8 or 16. Currently, Phonos only supports recording 8-bit samples. However, future versions of Phonos will support 16-bit recording. You may, however, playback 16-bit WaveFiles that were created from other sources.

Number of Channels

This line shows the number of channels the current WaveFile was recorded at. Phonos gives you the option of one channel (mono) or two (stereo). In the case of this Window, one channel (mono) was selected when the WaveFile was recorded.

A word that describes any pre-digital method of recording. Analog systems use a physical medium of one type or another, such as vinyl phonograph records, compact discs, or some kind of magnetic tape.

In Phonos literature, this term is often used as a generic category that includes all *user-recorded* audio files: WaveFiles and ClipAreas, but not MIDI files.

Custom-point mixing blends a copy of a WaveFile from the WaveFile directory *with whatever point* (in the time scale indicators) of the current WaveFile that you mark with the blackline cursor. It is then completed by clicking the File Menu's *Open WaveFile* command, selecting the other WaveFile, and clicking **OK.** The result can be saved with the Edit Menu's *Save New WaveFile* command.

Zero-point mixing is the easiest and most automatic form of mixing in Phonos. It mixes a copy of a WaveFile from the WaveFile directory *with the beginning*, or zero point (in the time scale indicators) of the current WaveFile. It is performed by clicking the File Menu's *Open WaveFile* command, selecting the other WaveFile, and clicking **OK**. The result can be saved with the Edit Menu's *Save New WaveFile* command.

The purple tracking indicator is an editing aid that moves across your Compressed View during playback. It is useful in monitoring the playback over the time scale indicator to zero-in on the approximate location of the WaveFile that you want to edit. Use your ears to listen for the location, use your eyes (by eyeing the purple tracking indicator) to watch for it. When you terminate reel motion, the indicator converts to a vertical line of the same color, to mark the stopping point.

The discrete unit or the "atom" of information stored in the computer's memory. A bit may have a digit of 0 or 1 (hence the name "digital"). The unique arrangement of 0-bits and 1-bits is the stuff of any digital file, including Phonos' audio files. The more bits that are used in a WaveFile, the more detail it contains, though with the consequence that the supply of bits is more quickly exhausted. The sampling rate is the rate at which bits are used.

In the Phonos context, a channel is the left or right side of a stereo system. A WaveFile recorded with the stereo option (chosen in the Recording Console's Preferences box) occupies exactly double the space that a one-channel (mono) recording occupies.

A ClipArea is a segment of a WaveFile that comes into existence the moment it is defined by marking its beginning and end points with the manipulation controls on the Phonos Main Screen, then named, saved, and sorted into a ClipFile.

A ClipFile is "folder" in which one or more ClipAreas is stored. To exist, a ClipFile must be given an eight-character (or shorter) name with the *Save ClipFile* command and it must hold at least one ClipArea. A ClipFile may be sorted into any directory you choose. The ClipAreas in a ClipFile may or may not *otherwise* have anything to do with each other.

This, the smaller of your two Waveform Data views, contains a profile of the entire current WaveFile and is used to navigate within the Expanded View, where you will do your editing. The blackline cursor and the current ClipArea are visible in their positions, relative to the entire WaveFile. You cannot edit in the Compressed View.

To erase, or "clear" a marked area is to throw it away before it is named and saved as a ClipArea (as opposed to the more involved process of deletion, which is throwing away a named, saved ClipArea).

This command, activated from the Main Screen's Manipulation Controls, causes a WaveFile of any length to automatically replay over and over without stopping, until you click the **Stop** button. It makes multiple playbacks possible without performing the stop/rewind/play cycle for each replay.

An acronym for Musical Instrument Digital Interface, a language which only your computer understands that enables it to accept input from other digitalized recordings or directly from an electronic instrument. Phonos can "speak" this language to the extent that it can accept files recorded, at some point in their history, with MIDI, and play them back.

A single-channel recording mode; a method that produces recording not separable into subtly different sound patterns. In Phonos, a WaveFile recorded at mono will produce identical sounds from both speakers, when played back. It occupies half the disk space of recordings made with stereo mode.

Time Scale Indicators are the horizontal yellow bars visible under the Compressed and Expanded Views. They are basically rulers whose tick marks show how far you are, in terms of time, from the beginning of the waveform (and, therefore, the WaveFile). The longer your WaveFile is, the more time there will be between the tick marks. The Compressed View's time scale indicator does not change because it must run the entire length of that WaveFile, and it automatically shifts from left to right as you shift the horizontal scroll thumb from left to right (and vice-versa).

Stereo, in Phonos and elsewhere, is the dual-channel recording mode; a method that produces recordings that are separable into subtly different channels. In Phonos, a stereo-recorded WaveFile, when played back, will be acoustically different between the two speakers.

The Trans Cursor button causes the area around the blackline cursor in the Compressed View to be instantly moved to the center of the Expanded View. You use it to expedite your editing or close-up inspection of any segment of the waveform. The Trans Cursor button is a Phonos exclusive, an editing tool unique in the world of desktop audio production.

In Phonos, Sampling rates are the three levels of audio quality at which a WaveFile can be created. They correspond to different parts of the radio spectrum and are measured in megahertz (MHz). The highest level, called "compact disk " (CD), is rated at 44.1 MHz and consumes the largest amount of hard-disk space. The lowest ("radio") is rated at 11 MHz and consumes the least amount. The midrange ("cassette") is rated at 22 MHz.

A WaveFile is a computer document that is analogous to a recording on a tape reel, phonograph record, etc., except that it can be manipulated much, much more easily and with greater precision.

Waveforms are the visual expressions---compact and expanded---of a WaveFile that is used to navigate about the recording and to manipulate and edit the recording itself. Long before the new era of digital audio editing, there were waveforms (e.g., on radar screens and analog-based audio equipment), but they were only indicators. In Phonos, the user can all but reach into the screen and manipulate this signal at will to alter the recording (WaveFile) it represents.

Deletion is the process of discarding a *saved* file, whether that file be a ClipFile, a WaveFile, or a MIDI file. Also, for purposes of Phonos' memory management, a single ClipArea is also a file, although the user need not think of it as such. Deletion is a destructive process that erases any of these entities from Phonos' *permanent* memory, as opposed to erasure or "clearing," which erases an unnamed ClipArea (and nothing else) from Phonos' *temporary* memory.

A separate type of deletion, a *nonfile* deletion, takes place when the *Delete Marked Area* command is used.

The Expanded View is the larger of your Main Screen's Waveform Data Views, and the one where the actual manipulations take place. In digital technology, the Expanded View replaces both the reel tape and the primitive electronic screen function of analog-era equipment.

Phonos' midrange sampling rate. The name has nothing to do with *real* cassettes, but only expresses the idea that cassette-recordings, as well as most other analog-based recordings, are inferior to CDs but better than the broadcast recordings heard on the radio. The cassette rate corresponds to 22 megahertz.

A file is an entity in a computer directory. When a file is deleted, it is erased from the directory it was in. There are several types of files in Phonos, each identifiable by a three-letter suffix, or "extension," which is not unlike an area code in a phone number.

The various kinds of files in Phonos have extensions, in the form of three-letter suffixes, to indicate the directory they are found in. A file is given its extension automatically when it is added to Phonos' memory. Wavefiles have .WAV; MIDI files, MID; ClipFiles,.CPF; and ClipAreas, which are not *called* files but in fact really are (so that the user can edit them as WaveFiles, if desired) have the extension .CPA.

DOS is the world's most widely sold software. It performs all the unglamorous functions necessary to support Windows applications. DOS is somewhat like a hallway full of doors, each of which leads to a room (a file) or an entire new hall (a subdirectory) which in turn can lead to more new rooms or halls. DOS expands to meet your needs in that each name you type after the c-prompt opens a door to such a "room" or "hallway". The rooms, or files, have names of up to eight letters, plus an extension of three letters to identify the type of file in question. See also the DOS Primer in the Help File's list of topics.

A collection of bits that contain a recording. When you record a WaveFile, these samples are written to the computer's memory at three possible rates: CD, cassette, and radio, which are symbolically named to indicate relative quality. The higher the rate, the more bits (of hard disk space) are used in the recorded sample.

Phonos has a play function in its Main Screen, in its Recording Console, and in its MIDI Panel.

In the Main Screen, the **Play** button plays back a WaveFile from its beginning, unless you have previously marked another point (during a previous playback) with the **SetStart** button. In that case, the **Play** button resumes playback from the marked position.

In the Recording Console, the **Play** button replays a pre-saved WaveFile from the beginning (only) for previewing purposes.

In the MIDI Control Panel, the **Play** button plays back a MIDI file from the beginning if you have previously stopped it with the MIDI **Stop** button.

A button that, in the Main Screen, opens a window in which you will give the WaveFile you are about to create a name of up to eight letters. After this naming, an **OK** button takes you to the Recording Console, where the **Record** button again appears, this time as the switch that starts the actual reel motion for recording (and turns the play indicator "lights" red).

A Main Screen control that quickly moves the Compressed View's cursor to a desired area within the WaveFile. The cursor's movement is in jumps, not continuous reel motion. Click **FF** to go *forth* in this manner, and **Rew** to go *back* in the same manner. Both buttons parallel in function to their cassette player functions. Use both buttons together to move about rapidly in a WaveFile.

A Main Screen control that quickly moves the Compressed View's cursor to a desired area within the WaveFile. The cursor's movement is in jumps, and not continuous. Click **Rew** to go *back* in this manner, and **FF** to go *forth* in the same manner. Both buttons parallel in function to their cassette player counterparts. Use both buttons at the same time to move about rapidly in a WaveFile.

A Main Screen control that plays back the current ClipArea. For an effective looping of a ClipArea, simply leave the cursor on this button and click the mouse as many times as desired. This replaces the imprecise and treble action of "stop/rewind/play" that one must do to edit a segment of a reel.

Phonos' volume adjustment feature is not merely a knob you turn while playing back a recording, but an actual editing capability. You can decrease the volume down to 1% of the original or increase it up to 100% . Larger increases require additional uses of the Volume Menu's commands. Adjusting ClipArea volume is completed within the Increase and Decrease Volume dialog boxes, but adjusting a WaveFile requires an additional step, the use of the *Save Adjustments* command.

To review the three ways of making volume adjustments, see the entry for "Scroll bars" in this glossary. See also the caution in Chapter Six of the User's Guide under *Decrease [Clip Area]*.

Phonos lets you adjust the volume of a ClipArea or WaveFile up or down. Both commands open a box with the same name that allows increases up to 100% or decreases of down to 99% of the original. When adjusting a ClipArea, the change is permanent when you click **OK** in the box. When adjusting a WaveFile, you must use the Edit Menu's *Save New WaveFile* command to make the change permanent.

.WAV Filename Extension

This file label .WAV is the standard three-letter extension recognized by all Windows-based multimedia audio programs. Any WaveFile created in Phonos will have the .WAV extension on the end and can therefore be used in other Windows-based audio programs. Microsoft has included four sample WaveFiles on your Windows installation diskettes; they can be found in your WINDOWS directory. You can open these files in Phonos with the Open WaveFile command in the File Menu, as with a WaveFile that you have created yourself.

.MID Filename Extension

The file label .MID is one of two standard three-letter extensions recognized by the MIDI Mapper in your Windows' (not Phonos') Control Panel. When you obtain MIDI files from various sources, the presence of this extension ensures that they will be compatible with Phonos' [MIDI Control Panel](#).

.RMI Filename Extension

The file label .RMI is one of two standard three-letter extensions recognized by the MIDI Mapper in your Windows' (not Phonos') Control Panel. When you obtain MIDI files from various sources, the presence of this extension ensures that they will be compatible with Phonos' [MIDI Control Panel](#).

.CPA Filename Extension

The file label .CPA identifies ClipArea Files, and is therefore exclusive to Phonos. ClipAreas are created with the Name Marked Area command in the Clips Menu. When you name the marked area and press the **OK** button, the name you enter appears in the ClipFile Window. This adds the .CPA extension to the name you gave to the marked area, and saves the sound within the marked area in the file. In essence, a mini WaveFile is created. For example, if you have named a marked area "DRUMS1", it is instantaneously saved to your hard drive as "DRUMS1.CPA". Since ClipAreas are actually small WaveFiles, you may also edit them as you would any WaveFile. For information on doing this, see Opening ClipAreas as WaveFiles.

.CPF Filename Extension

This file label may be thought of as a *file folder*. The .CPF extension tags a file as a ClipFile, a *folder* created to hold one or more ClipAreas. This filing system, the ClipFile concept, is a Phonos exclusive. When you choose the Save ClipFile command from the ***C*lips *M*enu**, you are prompted to a name the ClipFile to be saved. After clicking the **OK**, a .CPF extension is instantly added to the end of the name and saved to the same directory together with the ClipArea(s) that are in it. ClipFiles actually contain only the list of the ClipArea(s) they contain, not the actual sound data from each ClipArea. This allows you to work separately on each ClipArea, without disturbing the overall ClipFile that it resides in.

.INI Filename Extension

This file type is common to many Windows-based programs. It contains default information that programs read at execution. In your Windows directory there are several .INI files. Phonos uses its own .INI file (PHONOS.INI), to hold certain configuration preferences you have chosen as your preferences. For more information on creating PHONOS.INI and changing the values contained therein, refer to [Save Preferences](#).

The lower-left corner of your "DOS windows" has a box you can use to select audio file types: WaveFiles (.WAV), ClipFiles (.CPF), MIDI files (.MID or .RMI), and ClipAreas (.CPA). Whenever you select one of these types in the lower-left DOS box, its three-letter extension appears over the upper-right DOS box, heading a directory of all the files of that type. You can now choose files from this directory for opening, deletion, etc. For definitions of file types, see their individual entries.

Almost all PCs, as you know by now, have (at least) "a, b, and c" drives, the first two being the retrieval and input mechanisms for the two sizes of floppy disks, and "c" being that for the permanent disk that is part of your computer. For Phonos users, this is relevant whenever it is time to determine the destiny of a new ClipFile or WaveFile. Most of the time, you will have the "c" drive selected in your DOS program so that your work will be stored in the PC. If your hard drive is "partitioned" into two or more subdrives (e.g., "c and d" or "c, d, and e"), you may choose to set aside an entire free drive exclusively for Phonos.

The echo is a sound effect, or a specialized type of mixing, that produces a "reverberation" by mixing a copy of a WaveFile or ClipArea with itself, but with the copy very slightly advanced. You can perform trial echoes with the Mix Menu's *Echo WaveFile* command. Save the result, if desired, with the Edit Menu's *Save New WaveFile* command.

Multimedia cards are specialized, bolt on hardware that are needed in certain specialized applications. In the case of Phonos, it is an audio card that provides the additional medium (sound) to the visual medium already present in your PC, hence the name *multimedia*; a sound card converts your computer from a single medium (visual) to multimedia (audiovisual). Phonos accepts any Windows-compatible sound card that supports 8- or 16-bit samples in stereo or mono.

Midrange is the arbitrary, qualitative name given to Phonos' intermediate sampling rate (22 kHz), which is also called "cassette quality." It is selected in the Recording Console.

The Main Screen is your editing and mixing station, as opposed to the Recording Console (which is your recording station). It has six "windows." These windows work in conjunction with one another so you may edit your WaveFiles efficiently.

MRK B CLIP solidifies the beginning of a ClipArea that you have *already* marked in the Expanded View with your cursor. If you have not previously marked a beginning point, this control is not enabled.

MRK E CLIP solidifies the end of a ClipArea that you have *already* marked in the Expanded View with your cursor, and causes the ClipArea-to-be to appear in black. If you have not previously marked an ending point, this control is not enabled; nor does it do anything if there is not also a beginning for the ClipArea. To make this marked area into a true ClipArea, you must name and save it.

In audio contexts, a medium is where recorded information is stored. There are two kinds: analog and digital. Analog media, such as magnetic tape and vinyl disks, are physical and thus store information by being physically modified. Digital media, such as your computer's memory, are arrangements of two digits, 0 and 1, in combinations within a computer's memory. To take the analogy a little further, the combination of a lock that you buy is originally recorded on an analog (a tag of paper). But this is thrown away once you have "digitally" memorized the code.

A marked area is the precursor to a ClipArea; it is a ClipArea that has not been named and saved, yet nevertheless appears as a blackened region within the current WaveFile. You create a marked area with the **MRK B CLIP** and **MRK E CLIP** buttons in your Main Screen's Manipulation Controls. The removal (erasure) of unsatisfactory marked areas is called "clearing."

Phonos' MIDI Control Panel is where you execute all MIDI-related commands, except for selecting the actual recording to be played. If you use your Phonos-equipped PC as a jukebox, you can think of the **Open** button as an "on-switch" that illuminates the song menu; the **Play** button as an endless role of quarters with which to operate the mechanism; the **Stop** button as an emergency brake if you change your mind about a song while it is playing; the **Close** button as the "off-switch"; and the **Delete** button as a key you open the record compartment with to remove a record you are tired of.

A MIDI file is a pre-recorded audio file that is imported to your hard drive and filed with the extensions .MID and .RMI, depending on the source of the disk that was sold to you. That your MIDI files can have one of two extensions is of no consequence; you can pretend they are one (although DOS will sort them into different directories). MIDI files, unlike WaveFiles and ClipAreas, consume very little hard drive space because they are not written as waveforms. You can therefore store thousands of them easily.

The hard drive, which is drive "c" in all PCs (though there may be additional ones, such as "d"), is the mechanism that holds the medium of your computer's permanent memory, the "hard disk." Whenever anything is saved in Phonos, be it automatically or via an explicit command, it is placed here. The capacity of a hard disk/drive is measured in millions of 8-bit "bytes" (megabytes). The number of bytes that are used in the creation of your current WaveFile can be seen in the WaveFile Attributes Window, and this can be used to budget your hard disk space.

In Phonos contexts, an indicator is any part of the program's instruments that is not an actual tool, but merely shows something. These include the Play Indicator lights, the Recording Waveform, the Samples and Time Elapsed meters in your Recording Console; the entire Loop Play Statistics and WaveFile Attributes Windows; and the MIDI Panel's Status indicator. Indicators are not concerned with actual manipulations, but with their results. For more information on individual indicators, see their entries in this glossary.

The menu bar is the topmost Window in Phonos' Main Screen. There is also a smaller one over your MIDI Control Panel. Menu operations, in Phonos literature, are called *commands*.

Attributes are a series of parameters concerning WaveFiles. They are seen in the WaveFile Attributes Window. Aside from the name of the current (visible on the Main Screen) WaveFile, the attributes concern, in one way or another, the amount of memory used by the WaveFile, although they also express important qualitative information, such as reminding the user of the number of channels and the level of audio quality (sampling rate) that were chosen as recording options in the Recording Console. Each attribute has an entry in this glossary.

Your PC has two types of memory: permanent ("hard drive" or "hard disk space") and temporary (RAM or "system memory"). Both are stored as bits of information, namely a digit of either "0" or "1". IQSoft recommends, as a minimum, 120 million bytes of permanent memory and 4 million bytes of temporary. The permanent memory is the home of all your *saved* material, and the temporary (which would be automatically lost in the event of, say, a blackout) holds your marked areas before they are named as ClipAreas, then saved and sorted, and a newly recorded, adjusted, or modified WaveFile (one that is pre-saved.)

The Manipulation Controls are the twelve buttons that appear in the middle of your Main Screen. The top row is concerned with recording and perform essentially the same functions as the familiar controls found on any cassette player. The bottom row is concerned with editing and mixing your recordings.

Moving, in Phonos literature, refers specifically to the duplication of existing ClipAreas and changing their position within a WaveFile or transporting them to another WaveFile. These processes formerly, prior to the advent of desktop audio production, were laborious, inexact, and otherwise problematic. Phonos lets you perform such operations almost effortlessly, and the result is seamless and amenable to further easy modification.

Naming in Phonos is really a form of labeling. It is also the only time you will ever use a keyboard. WaveFiles are named between the two **Record** buttons: that in the Main Screen which opens the "Record WaveFile As..." Window, and the live switch in the Recording Console that you initiate the actual recording with. ClipAreas are named in a special dialog box that is opened with the Clips Menu's *Name Marked Area* command, and ClipFiles are named whenever you have a newly made ClipArea that is not sorted into an existing ClipFile.

In times past, naming was a bothersome task, involving the labeling of jars or drawers instead of digital ClipFiles, reels instead of WaveFiles, and bits of tape instead of ClipAreas. Desktop audio production has changed all that.

In the highest levels of professional audio editing, up to 64 channels are available for live stage presentations with as many speakers. There are software programs costing several hundred or thousands of dollars that have this many, though after two channels (stereo) or, at most four (quadraphonic), the point of diminishing returns is quickly reached. Most Phonos users will not find it practical to have the additional speakers needed for the additional separations afforded by the extra channels, so Phonos offers up to two channels. When stereo is selected, hard drive space is used up twice as quickly as when mono is selected.

To convert a marked area into a stored ClipArea, it must first be named with the Clip Menu's *Name Marked Area* command so that it can then be sorted into a ClipFile and retrieved when needed, using its name.

In Phonos, *Open* always refers to the opening of a directory of some kind. The WaveFile and ClipFile directories are opened with menu commands, and the MIDI directory is opened with a button on the MIDI Control Panel. The two menu commands are those that you will probably use more than any others. Accordingly the top command in the File Menu is *Open WaveFile* and the top one in the Clips Menu is *Open ClipFile*.

In Phonos, *playback* refers to the reel motion initiated by clicking any of the three **Play** buttons, or by double-clicking any ClipArea in the current ClipFile (to hear it).

Playback is your method of previewing recordings, notably in the Recording Console, so that you can decide whether to keep it or not. It can also be used to do an "audio inventory" of the current ClipFile. The rest of the time, of course, playback is done simply to enjoy a successfully edited WaveFile or a MIDI tune in your "jukebox." Playback is the reel motion that is traditionally associated with the color green, hence the green play indicators in the Recording Console.

Phonos has three **Play** buttons. Each is a live switch initiating playback in Phonos' control/command centers (Main Screen, Recording Console, and MIDI Panel). Each can be found and are described in detail in the Contents page of this help file.

Pre-digital studio equipment had lights to indicate reel motion. They were red during recording and green during playback. Phonos' Recording Console recalls this convention by having the two little indicator lights go red, green, or dark, as appropriate.

Reel motion is the generic term describing all functions in Phonos that have a "reel-moving" counterpart among the analog recording systems. These include all of Phonos' **Play** buttons, **Fast-Forward**, **Rewind**, **Reverse Clip**, **Loop Play**, and the Recording Console's **Record** button. The **Record** button in the Main Screen is not a "live switch" because it does not directly initiate reel motion. All **Stop** buttons in Phonos terminate reel motion.

There are two **Record** buttons in Phonos. Between them, they do what the Record function of an ordinary cassette recorder does (except that you do not have to simultaneously click Phonos' **Play** button!). These two **Record** buttons, in the order you will encounter them, are in your Main Screen and your Recording Console. The former opens the "Record WaveFile As..." Window, where you name your WaveFile before being taken to the Recording Console, where the other **Record** button is the actual live switch, that begins the "red-light" recording session.

Radio is an arbitrary, qualitative name given to Phonos' lowest sampling rate, which you select in the Recording Console. It is called this because recordings heard on the radio are generally of lower quality, through distortion or distance, than those heard "in person." This rate uses the least amount of hard drive space and corresponds to 11 megahertz.

The Reverse Clip control plays the current ClipArea in reverse. While this audibly plays the ClipArea in reverse and is therefore a type of reel motion, it does not, because of the nature of digital recording media, literally *rewind* the ClipArea. One reverse clip playback can thus follow another without the delay and inconvenience of rewinding.

The Recording Console is where you do all of your recording in Phonos, save for the importation of MIDI files. To reach it, you click the **Record** button in the Main Screen, name the WaveFile you are about to record/create, and click **OK**. The Recording Console is made up of indicators and controls that reflect Phonos' professional heritage. Each element of the Console has an entry in this glossary. For an overview, see Section 2.3 of the Phonos' User's Manual.

The Recorded Waveform is a miniature waveform data view, modeled after the two principle Views found in the Main Screen. It's primary function is to show newly recorded waveform in the Recording Console before making a decision on whether to save or delete the new file. Playback, initiated by pressing the *Play* button in the Recording Console, begins from the scroll thumb position at the bottom of the window. To start playback from the beginning, position the scroll thumb to the far left; to start from the middle, position it in the center.

"Record WaveFile As..." is a DOS-based window brought to the screen whenever you click the Main Screen's **Record** button. It is here that you type in a name, of up to eight characters, for the WaveFile you are about to record/create. After the naming, click **OK** to get to the Recording Console.

Recording options are two choices you make in the Recording Console before recording a WaveFile, although you can set and save defaults if you habitually use the same options with the File Menu's *Save Preferences* command. You will select (1) a sampling rate of 11, 22, or 44.1 kHz and (2) mono or stereo. The higher the sampling rate and number of channels, the better sounding the recording will be, although more of your disk space or memory will be consumed. Phonos comes with a preset default of 11 kHz ("Midrange" or "cassette quality") and mono.

Splicing is a term that, prior to desktop audio production, was much used but is now virtually obsolete. Predigital editors had to use a small device, a splicer, to mechanically join the severed ends of a reel that was cut so that something could be taken out or inserted. In Phonos, splicing is a totally painless, instantaneous, and automatic process that happens each time the *Insert ClipArea* and *Delete Marked Area* commands, and some of the mixing commands, are used.

Samples can be compared to frames in a motion picture reel. In the motion picture industry, 16-frames per second go into every second of time; this is a sample. In Phonos, there are three choices as to the size of a sample (which is composed of bits rather than frames), so we speak not merely in terms of samples but rates of samples, or sampling rates, of which Phonos offers three to choose from in the Recording Console.

Saving, in all computer systems, means recording a document from the computer's temporary memory or a floppy disk to its hard disk drive. In Phonos, this means adding a WaveFile to the permanent memory with the Close/Save button in the Recording Console. It also includes the saving of an edited version of a WaveFile.

If you habitually use the same set of preferences, you can save them as a group of defaults (automatic settings) with the *Save Preferences* command.

There are four **Stop** buttons in Phonos. Each one is used to terminate continuous reel motion (though not rewinding and fast-forwarding). Refer to the Contents page of this help file for detailed information on each of the various Phonos Stop Buttons.

This Main Screen control is used when you want to resume playback from the position, within a WaveFile that you last stopped it, instead of from the beginning. To stop and resume from anywhere other than the beginning, therefore, you will click Set Start *after* clicking **Stop** (or *before* clicking **Play**.)

Scroll bars are at most tools and at least indicators that are a regular feature of DOS/Windows-based software programs. In Phonos, they are found in your DOS window boxes, the Adjust Volume boxes, the ClipFile Window, and the WaveForm Views, including the Recorded Waveform Window in the Recording Console.

A scroll thumb is the small square that is sometimes a manipulable part of a scrollbar and sometimes only the moving portion of an indicator. You can move, with your mouse and cursor, the scroll thumb within the scroll bars found in the Adjust Volume boxes, the ClipFile Window, the DOS directories, the Expanded View, and the Recorded Waveform Window (in the Recording Console). The scroll thumbs in Phonos' four Waveform Views (including the small one in the Recording console) are place markers only.

Saving a ClipFile is actually the *resaving* of a ClipFile that you do when the ClipFile has been altered by the addition of a new ClipArea. As such, the *Save ClipFile* command is the one you use to save ClipAreas, which are not saved individually but as parts of whatever ClipArea you have sorted it into.

"Space Occupied on Drive" is a WaveFile parameter that indicates how much of your computer's memory is taken up by the current WaveFile. It is quantified in *bytes*, which are clusters of *8 bits*, which are the audio building blocks that make up the WaveFile. This figure can be compared with your PC's total memory capacity.

For questions regarding Phonos, you may write us at 41800 Enterprise Circle South, Suite H, Temecula, CA, 92590, or call at (909) 695-1744 or (909) 695-1747 (fax). Please include the number of your copy of Phonos with your inquiry.

The Time Elapsed meter in the Recording Console is a stopwatch that indicates the length in time of your recording. The time is computed by Phonos from the number of bits consumed while the recording indicators are red.

A widget is an imaginary commodity that can be compared to a WaveFile. ClipAreas are Widget parts, and ClipFiles are bins containing these parts.

A directory, in DOS usage, is not only a list of the contents in a DOS filing cabinet, but the contents of the cabinet as well; the mere act of pointing to and clicking a name in a DOS directory is all you need to do to get at the document (or, in Phonos, the sound file) it represents. These directories are found in the "DOS boxes" within "Open," "Delete," "Save As...," "Record As..." and other DOS windows. Phonos uses an automatic filing system that assigns special suffixes (extensions) to identify files by the directories they belong to. The principal ones in Phonos are .WAV for the WaveFile Directory and .CPF for the ClipFile Directory. Among the others is the .CPA Directory, for individual ClipAreas. It is not necessary to think of ClipAreas as proper files (though they technically are) unless you want to promote a ClipArea to a WaveFile by adding it to the .WAV Directory. MIDI files are sorted by Phonos into either .MID or .RMI Directories, depending on their source, but this does not affect their utility in any important way.

A byte is a bundle of eight bits, or an "eight-pack" of bits (see entry in this glossary), and is the unit with which both temporary memory (RAM or "system memory") and permanent memory (hard disk space) are quantified. IQSoft recommends 120 million bytes for the former and 4 million bytes for the latter. The "Space Occupied on Disk" parameter in your WaveFile Attributes Window (Main Screen) can be compared against your total memory capacity, so that you can budget your bytes.

The blackline cursor is a tentative chalk mark that you make in a WaveFile to delineate the beginning and end of a marked area that will be named and saved as a ClipArea. You put it in place with your arrow cursor and a single click of your mouse. Clicking anywhere else in the WaveFile shifts it to that point. To make the marks permanent, click the **MRK B CLIP** button after you mark the beginning with the blackline cursor, then do the same with the **MRK E CLIP** button.

In Phonos literature, *controls* refer to buttons (and checkboxes) found in the Main Screen, the Recording Console, and the MIDI Panel. *Commands* refer to the options that are selected from Phonos' several menus.

CD is an arbitrary name given to Phonos' highest sampling rate, 44.1 kHz, because most audio connoisseurs claim that Compact Disk fidelity is better than cassette recording, which is the next highest rate. It uses two-to four times as much hard disk space as the other sampling rates, but yields smoother contours in the resulting recording and its waveform. Sampling rates are selected in your Recording Console.

Although there is not a *Copy* command in Phonos, it is something that takes place quite often, such as when (1) a ClipArea is copied from a marked area in a WaveFile and named, then saved, in a ClipFile; (2) a copy of a ClipArea or WaveFile is retrieved from their respective directories for mixing, modification, etc. These do not exhaust the possibilities; in general, copying is something that is part of several processes in Phonos and therefore falls within their ken: saving, mixing, adjusting, opening, etc.

Cutting out a portion of a WaveFile is like cutting out a portion of a word-processed document or a piece of pipe and then rejoining the ends. Use the *Delete Marked Area* command for this purpose. If you want to save the area being cut out to "paste" or "move" it elsewhere, then name and save it as a ClipArea before deleting it from the original WaveFile.

Clearing is the erasure of a mark (but not the segment of the WaveFile that it marked) when you decide not to make the marked area into a ClipArea. Consequently, it is a simple process, not unlike erasing an unsatisfactory pencil mark in a memo or sketch.

If, after recording a WaveFile in your Recording Console, you decide to save it as such, then exit the Console with this button. You will be returned to the Main Screen, where the new WaveFile will be written in the Waveform Data Views.

If, after recording a WaveFile in the Recording Console, you decide not to keep it for any reason, then exit the Console with this button. You will be returned to a blank Main Screen, where you can attempt to re-record by starting over.

Digital recording, as opposed to analog recording, is the storage of information (in this case, audio information) by forming complex sequences or matrices of "bits" of information that have an identity of either 0 or 1. The 0 and the 1 can also be thought of as the "digital alphabet" that Phonos uses to process whole books in the form of WaveFiles. This differs from analog recording, in which a medium stores information by being somehow physically modified (e.g., etching, in the case of phonograph records).

Disk space refers to the capacity of your PC's permanent memory stored in the "hard disk" which exists within your "hard drive" (an actual part of your machine; see glossary entry). It is here that everything you save, be it with an explicit *Save* command or an automatic execution (e.g., the volume adjustment of a *ClipArea*), is kept. Hard drive disk space (permanent memory) is contrasted with system memory (RAM), which is temporary and holds such things as unnamed marked areas and unsaved *WaveFiles*. Disk space is more rapidly consumed by stereo than mono, and by higher sampling rates. *WaveFiles* and *ClipAreas* use a lot of it, both for sound storage and writing waveforms. MIDI files consume very little disk space. IQSoft recommends a minimum of 120-megabyte capacity.

Data, in a Phonos context, are the tens-of-thousands of bits that Phonos assembles and "writes" as waveforms to the two "Data Waveform Views" on your Main Screen as it also writes them, with the two-digit alphabet (0,1) as recorded sound into your computer's memory for retrieval.

Desktop Audio Production is a revolution in usership and technology, in which ordinary people can enter the fields of audio editing and mixing without learning special skills, spending huge sums of money, or leaving home. Phonos was designed to include ever greater numbers of people in the revolution.

Editing is that set of skills that once required specialized training and expensive, bulky equipment to master. Desktop Audio Production has changed all that. In Phonos, editing specifically includes recording and previewing sound files (WaveFiles and ClipAreas), plus cutting, copying, inserting, deleting, and adjusting their volume. Editing, as a catchall term, occasionally includes the mixing functions (zero- and custom-point mixing, echo, etc.).

To exit the program or any part of it is to quit it completely. These parts include this glossary, and the help file that contains it. The Phonos-specific *Exit* command in the File Menu is the user's route out of the entire program. If you have unsaved changes to the current WaveFile (if you have not already closed it with the *Close Current WaveFile* command), or if there is a new but unsaved ClipArea, Phonos will ask you if you want these saved before you exit the program.

This term has at least two definitions. Often, it refers to discontinuities in audio recordings or editing processes; at other times, it may be the audible scarring that results from the manual splicing of reel tape or the clicks left by the use of a stop function during recording. The latter type of glitch is an impossibility in Phonos. As to the former, the only discontinuities that will be present in Phonos files are those that you *want* in, for whatever reason. However, when you have recorded an unusually long WaveFile and have commanded Phonos to save it, a minute or two may pass while the program writes it to the WaveForm Views because a great deal of bits are involved. Fortunately, Phonos is able to actually tell you what is taking place.

There are two icons associated with Phonos. The program icon is composed of a compact disk representing the ability of computers to digitally read recorded sound, and a WaveFile motif representing the myriad editing and mixing capabilities of Desktop Audio Production. The IQSoft company logotype sports the initials for Intelligence Quotient, to commemorate the intellectual revolution that has finally made Desktop Audio Production a possibility for millions of users; the initials are on a scroll motif reminiscent of a computer printout.

kHz is the abbreviated form of kiloHertz. In broadcasting contexts, kHz refers to the "Hertzian" (radio and television) frequencies within the radio spectrum; in recording industry contexts, it is a series of standard cycling rates at which recordings are made; in Phonos, it is a corresponding series of sampling rates that the user can choose from when recording.

Sound mixing is a process by which part or all of one recording is blended with another for a desired combination of sounds. A vocal, for instance, can be added to an instrumental, or vice-versa. A library of sound effects can be developed and drawn upon and (for the Phonos user) mixed into a WaveFile, which is the original recording. Mixing is done with the commands in your Mix Menu.

The jukebox is a universally familiar entertainment device developed in the early 20th century. Early versions from companies such as Germany's Wurlitzer, were limited to 10 or 12 vinyl disks as their storage medium. Later boxes could efficiently handle dozens of two-sided disks. With Phonos, the jukebox is no longer a coin gobbling contraption you have to drive to a bar to play, but a home-entertainment device, like your VCR. The actual menu is none other than the DOS window, "Open MIDI File," that is reached with your MIDI Menu. Further, the Phonos jukebox has a capacity not of one or several dozen songs (or other recordings), but several dozen *hundred*.

The process of undoing in Phonos is very similar to that of any word processing Undo command. Any unsaved edit, be it a mix, echo, etc. can be reverted back to the previous version by "undoing" the last operation, or "edit".

Phonos - The Digital SoundShop
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