

Control Window

The **Control Window** has several functions. It acts as a master window, controlling the behavior of all the other windows. If you close the **Control Window** you will be asked to verify your edits and then the entire scratchpad will close. If you miniaturize it or select it either by clicking on it or choosing it from the **Windows** submenu, all associated windows will come up too. (This has some annoying consequences, which I'll work out later.)

It has six buttons (one in each corner :-)).

1) **Load Driver.** Mashing this button does the following: It starts the driver program, it reads in all the information from the **Soundfile Window**, it reads in all the data from the **Playnote window**. It doesn't play a mix, just prepares it. When the button is hit it becomes highlighted and says "**Reload Driver**", meaning that if you hit it in that state it will kill the current driver and start everything over. You don't normally need to use this button since the **Play** and **Reload Playnotes** button will start up the driver. You use it when a mix is already running and you want to kill it and start again from scratch.

2) **Kill Driver.** Mashing this guy will simply kill the current driver and stop everything that is going on. Death is instant and total. It is useful when things get out of hand and confusion reigns.

3) **Reload Playnotes.** This button assumes that the driver is already running, and it will simply read in either the entire contents of the **Playnote Window**, or a selection you have made with the mouse. This is useful if you want to add a note or alter a note. You have to be careful about allocation here, however, since a track can only play one note at a time you may wipe out something that was already there. (This is often what you want to do.) When things get too complicated it is usually best just to restart the driver.

4) **Play.** This will play the currently loaded mix, using the times given in the **play from, play to** forms. If the driver is not currently loaded it will also start the driver and load in all the data. It becomes a **Stop** button when playing. If your mouse click is not immediately recognized you shouldn't click again, since this will just stack clicks and cause confusion.

5) **Stop.** This will stop the currently playing mix, but will not kill the driver. It is better to use this one than the altered **Play**

button since I haven't quite worked out the logic of mouse clicks in this case yet. Sometimes it may take a moment or two to take effect. Be patient.

6) **Pause.** This will pause the currently playing mix. It becomes a **resume** button, which when mashed will resume the mix. This also takes some time to respond at times. Be patient.

It has four forms

1) **Timescale.** This describes the quantization of the mix. The driver works by quantizing time into ticks of this length. At each tick it stores information about who is playing where, what, how loud, etc. Each tick thus contains a complete record of the state of the mix for that moment. The data in the **Playnote window** is used to set this information up. The default **timescale** is 1/100 of a second. This means that sounds, amplitude alterations, etc, can alter states with this granularity. In other words, if you want a note to enter at time 1.005 and your **timescale** is .01, your sound will enter at time 1.00. The sounds will play to whatever duration you specify, regardless of the **timescale**. The maximum **timescale** for a 44.1k mix is about 1.5 seconds. The limitation is caused by the size of the buffers being sent to the DACs. .01 is a good **timescale** for most purposes. Larger **timescales** will result in somewhat more efficient mixes since there is less reshuffling of the disk and data but you lose accuracy. (Changes in amplitude and frequency are done on a sample-by-sample basis, however, regardless of the timescale, so larger timescales should not normally result in clicks.). There are certain conditions, however, in which a smaller timescale may result in better performance. In particular, if a great many files are being mixed, a smaller timescale seems to allow disk overhead to be distributed more evenly over a period of time. With a large timescale, at each grain, a lot of diskings has to be done and this might cause interruptions.

2) **Tracks.** This is the maximum number of tracks you will be using. It is best to leave it at 8. If you are using less than 8 (the absolute maximum) you may want to specify fewer to gain slightly greater efficiency, but I don't think that this normally would make much difference. See the manual page on the **Tracks Window**.

3&4) **Play from.., play to.** Very often you will only want to hear selected portions of a mix. You may enter the starting and ending times in these two forms. You don't need to reload or restart the mix to do this, just change the times and hit play. If you put a very high number in the **play to** form, it will just play to the end of the mix.

Order of Operations.

If you make any changes in the names or numbers of soundfiles, or the gains of individual soundfiles in the **soundfile window**, or the **timescale** or maximum number of tracks, you will have to restart the driver. Most other changes, such as altering the times of a mix in the **control window**, some changes in the **playnote window**, turning soundfiles off and on in the **soundfile window**, making any changes in the **tracks window**, can be done without restarting the driver.