122 to 1320. The number 10,000,000 is derived from the DSP's 10MHz master clock.) The **Rate** slider will show you all available rates.

Users often feel the need to use a 44K sampling rate since it is the CD standard. But, if your final distribution media isn't a CD, there's not much point in using that fast of a sampling rate. Often, a 30K-32K sampling rate is just as good for material that will end up on tape. While monitor is on, try adjusting the rate slider and listening to the effect it has on audio quality. Pick the lowest rate that gives you acceptable audio quality. Once you pick a rate you should try to record all your samples at the same rate. This will prevent any problems when mixing samples.

There are a few situations that may require you to use lower sampling rates:

- Your hard disk is full
- Your hard disk is skipping during playback
- Your screen flashes

See Chapter 7 - Troubleshooting - for more information.

Monitor

Click this button to begin monitoring the Audio going into the A516 or AD1012. To adjust the level of the **Monitor**, you can load a Mixer and adjust the monitor or input channel by sliding the associated bar up or down.

Record

Click this button to start recording.

Stop

The Stop button is clicked to stop recording. The hard disk light may continue to flash for 1-20 seconds. This is normal and is dependent on your channel buffer size and hard disk speed.

Auto Filter

Only available on the AD1012. Activating Auto Filter will cause the Filter Value to "track" the Sampling Rate at the preferred relationship of: Filter Rate =1/2 Sampling Rate. Changes in the Sampling Rate will automatically cause the Filter rate to update as long as auto filter is activated.

The AD516's low pass filter is always set to .45 times the sampling rate

Name

This button must be selected to name a sample before making a recording. The default setting is Untitled. If the sample name has already been used, Studio 16 will append a number

to the new recording. To change a name of a sample after is has been recorded, you can use the Rename option in the Sample List Menu.

NOTE Do not use a greater than symbol (>) in a sample name. It is reserved to delineate regions.

Recorder Menu

The Recorder Menu allows you to select the input and output channel(s) to record. If you are recording in mono, select either Input L or Input R. For stereo, activate both channels. You may also select Output L or Output R.

If you have multiple cards installed, you can record more than 2 channels simultaneously.

Handler Menu

This menu only appears if you have more than one AD516 or AD1012 installed, it allows you to select which card the recorder settings will affect.

Sample List

Keyboard Shortcut: ^ O

Class: Application Module

Description: The Sample List contains lists of your samples by directory. You can play, rename, delete, and edit from Sample List. Launch the Sample List by selecting it from the Applications Menu, or type ^ O.

A sample in the Sample List is a digitized sound on your hard disk. Since Studio 16 always works with files on the hard disk, it is a little different from most programs. For example, there is no need to save each sound before you quit. If you quit Studio 16, then re-run it later, all your sounds in the Sample List will still be there. Of course, if you have your samples in RAM:, your samples will be lost when you turn off your Amiga unless you save them to disk.

All the samples in the Sample List are draggable to the Cue List. As are the regions that can be displayed in Sample List (activate Show Regions in the Sample List Menu).

All the Sample List Menu options can be executed on multiple samples. Select multiple samples by holding down the shift key, and clicking on the Samples' names.

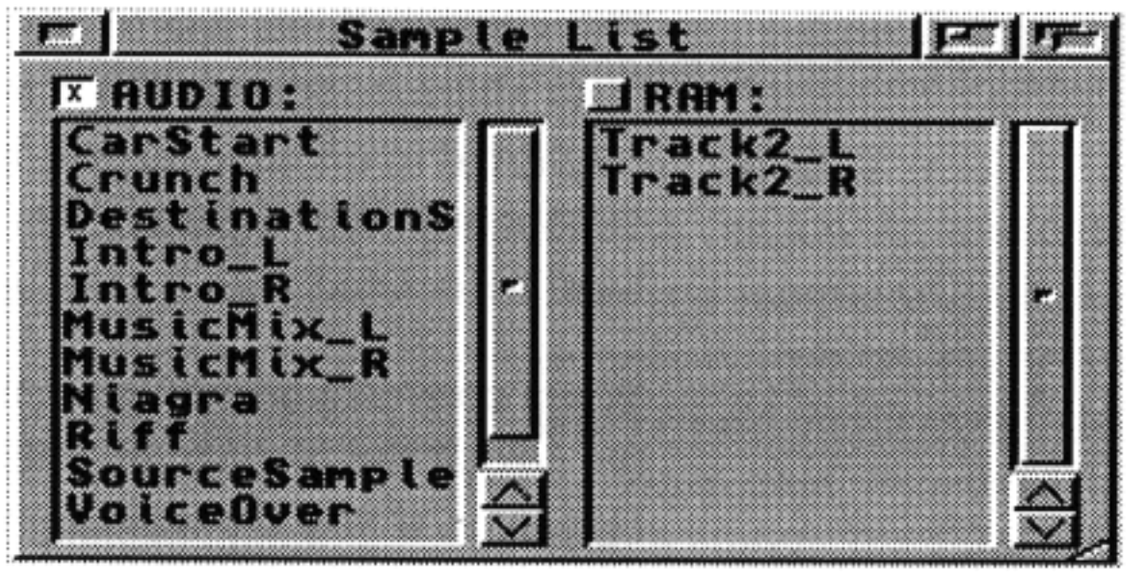

Figure 8-92. Sample List

Gadget

Record Path The record path is the directory where samples will be recorded to. It is indicated by an active box next to the directory name. To change the record path, add another path (menu option) and then click the active box next to the new directory's name.

Sample List Menu

Play Sample

Select this option to play a sample. Select multiple samples by shift clicking. When playing back multiple samples, the sampling rate must be the same for all samples. A single AD516 is limited to a maximum of 8 simultaneous samples, the AD1012 is limited to a maximum of 4.

NOTE **AD516 ONLY** - A stereo sample will appear in the Sample List as two samples, like: Untitled_L, and Untitled_R. Play both channels by selecting both samples in Sample List. Shift clicking will enable you to select both of them, hit *A*-P to play.

To adjust the volume and pan of samples while they play, load the Mixer from the Applications Menu and make level adjustments in real-time.

Stop Playback

To stop playing sounds, select the Stop Playback item, (*A*-S).

Rename Sample

The **Rename** option allows you to change the name of samples in Sample List. Select one or more sample names so that they are highlighted. Select the **Rename** Samples option. For each sample selected, a requester will appear asking you to type in the new name for the sample.

Delete Sample

To remove a sound permanently from your hard disk and the Sample List, select its name in the Sample List then select the Delete option. This will delete the file.

WARNING There is no way to recover a sample deleted in Sample List or the Cue List.

Convert Sample

This option allows you to convert the file format of a sample to an alternate format. Once a Studio16_2.0 sample has been converted to another format, it can still be accessed by Studio 16, but any region parameters and/or SMPTE start times that were associated with it may be lost.

When converting samples to eight bit formats, you decrease the size of the file size by half, and you also lower its fidelity. However, if you are working with samples that don't require a high Signal-to-Noise Ratio, (e.g. explosions, crashes. etc.) converting them to an 8 bit format will save disk space and still allow you to play them simultaneously with your 16 bit samples, assuming they were recorded at the same rate.

Available file formats are:

Studio 16_2.0 Format

Studio16_2.0 is a 16 bit format, similar to AIFF, but it appends special data that keeps track of non-destructive edits and regions. Note that even though the AD1012 records with 12 bits of resolution, it stores files using 16 bits. This format was not altered for the 3.0 release of Studio 16.

Studio16_1.0 Format

The original Studio 16 format.

AIFF 16 bit Format

This is a standard file format for 16 bit files. Studio 16 edits, loads, and saves sounds with 16 bits. AIFF is very common on the Macintosh, and is used by some Amiga software. AIFF does not remember regions or non-destructive edits.

AIFF 8 bit Format

This is an AIFF format that only uses 8 bits. If you convert to this format, you will lose some sound quality since you are dropping bits. However, the file's size will be reduced by about half.

IFF 8SVX Format

This is a very common Amiga format for 8 bit samples. Files convert to this format can be loaded into 8 bit sound editors, such as Perfect Sound or Audition 4. If you convert to this format, you will lose some sound quality since you are dropping bits. However, if the file is a sound effect you may not notice the decrease in fidelity, and the file's size will be reduced by about half.

RAW Format

This stores raw sample data in two's complement binary form. The first sample will be in the first word of the file (each sample is 16 bits), the second sample will be in the second word (third and fourth bytes), etc. This format is not generally recommended, except perhaps for use by programmers who want a simple file format to load.

Edit Sample

Selecting a sample name then the **Edit** option will bring up the sample in an editor. See the **Edit** Reference Section for a more complete description.

Add New Path

Select this option to add another directory to the Sample List. This is especially useful if you are working with multiple hard drives or you have samples organized into multiple directories. When selected, a path requester will appear

allowing you to select a new path. Click OK to update Sample List. A maximum of eight directories can be listed at once.

Remove Path Select Remove to bring up a Remove Path requester. Only those directories currently listed in Sample List will be available for removal.

Update Path Selecting this option will update the current directories in the Sample List. This is useful if you are using a removable media drive like SyQuest, and you change cartridges, or if you are copying files from DF0 and you change diskettes.

Show Regions When activated, a region list will be added to the right of your paths. The region list will display the regions that have been selected for a specific sample. Select a sample with regions, and the names of the regions will be displayed in the region list. You can drag regions from the Sample List into the Cue List.

SMPTE Generator

Keyboard Shortcut: ^ G

Class: Application Module

Description: The SMPTE Generator module allows you to generate internal SMPTE time code. You can use the internal time code generator to drive the Cue List and the SMPTE Monitor modules.

When SMPTE Generator is opened, it automatically sets the current SMPTE Source to Internal. When you close the SMPTE generator, the default source becomes active again.

The main advantage of the internal time code generator is its ability to trigger the Cue List. Anyone can set up long audio sequences of different samples without using the editor to do destructive editing. The Cue List allows you to specify the starting time code and mix level of an unlimited number of sounds.

The SMPTE Generator does not output physical time code, or enable you to stripe tapes. SunRize's optional module, SMPTE Output, includes this feature.

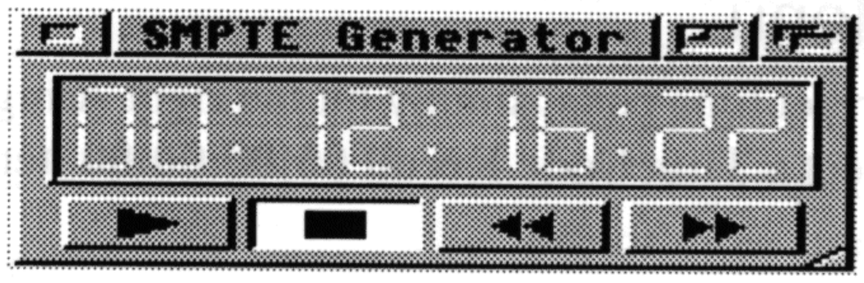

Figure 8-93. SMPTE Generator

Gadget

Display The SMPTE display obviously shows the current time code being generated by Studio 16. Not so obvious is the fact the you can type directly into the display when it is stopped. Just click on the digit you want to change and type in the new number. Also, when used in conjunction with the Cue List, SMPTE Generator will update to the location of the play flag whenever it is moved.

Play This will start time code generation from the current value displayed. If Cue List has entries listed, and it's turned on, clicking play here will trigger the Cue List.

Stop This will stop (pause) the generation of time code, to continue generation click (play).

Rewind This will advance the counter at 5 × normal speed in the reverse direction. Time code is not generated in this mode.

Fast Forward This will advance the counter at 5 × normal speed. Time code is not generated in this mode.

The recommended set time is 5 seconds before the first sample triggers. This allows time for samples to preload.

SMPTE Gen Menu

Zero SMPTE Time Select this option to reset the SMPTE counter to 00:00:00:00.

Play / Stop / Rewind / FastForward These functions are explained above in the gadget section. The keyboard shortcuts for the buttons are listed next to their menu item names.

Store Menu

This menu allows you to store up to 10 preset time codes. To store a specific time code, first type in the desired frame location into the SMPTE Generator display or fastforward to the desired time. Then select a **Memory # 0-9** item from this menu or hit the right Amiga key, shift, and a number key 0-9.

Recall Menu

To recall a preset time code, simply hit the right Amiga and the number key used to store it or select a **TimeCode Recall 00:00:00:00** item.

SMPTE Monitor

Keyboard Shortcut: ^ S

Class: Application Module

Description: The SMPTE Monitor allows you to view incoming external or internal SMPTE time code. It is useful for viewing the value of external time code coming into a card. This module can allow you to do pencil edits without having to record a SMPTE window box on video tape. If you own a genlock, you can use this module to produce a SMPTE window dub. Select Hide Title Bar from the SMPTE Monitor Menu.

When used in conjunction with the Cue List, SMPTE Monitor will update to the location of the play flag whenever it is moved.

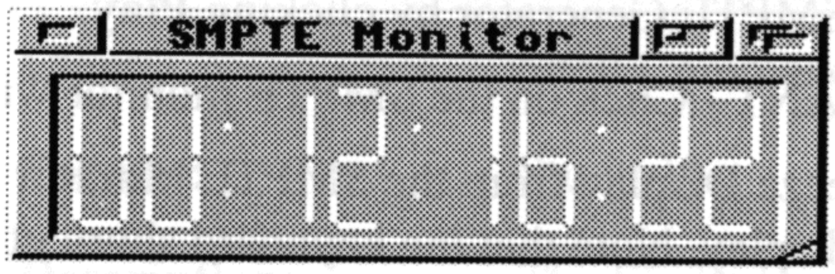

Figure 8-94. SMPTE Monitor

The SMPTE monitor displays the current time code in its window. The SMPTE monitor also looks for three types of SMPTE errors, invalid time code and SMPTE time-out and SMPTE jump. If a time code is deemed invalid by Studio 16, one of three small squares in the upper left corner of the SMPTE Monitor window will flash. It is normal for this square to flash occasionally, such as when you start and stop time code. If the square flashes constantly, check to make sure that you have set the correct SMPTE frame rate in Preferences.

From Left to Right, the squares mean:

SMPTE Time Out

No time code was detected for about 1/2 a second. Pausing your video deck will cause this.

SMPTE Time Code Error

This error is generated if an illegal time code is read by the SMPTE reader. For example, a time code with 69 seconds would generate this error. This error typically results from