

CUBASIS

AV

for Macintosh

User Guide

Steinberg

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1

Introduction

Welcome!

Welcome to the Cubasis AV on-line documentation!

Please use one of the methods described below to quickly find the desired information:

- **Use the Table of Contents provided by the Adobe Acrobat Reader program.**
- **Use the Adobe Acrobat Reader Search function.**
- **Click on a cross-reference (green text) to jump to the respective topic.**

It is possible to print out this document or parts of it.

Additional Information on how to use the Adobe Acrobat Reader program can be found in its on-line Help.

How you can reach us

You can find us at the World Wide Web, at the following address:

- **www.steinberg.net.**

Here you can find the following sections (among others):

- The Service Web contains support information, answers the frequently asked questions etc.
- You can send email to our support personnel from the web pages.
- On the Web site you will find the latest update of your program and demo version of other Steinberg products, for instant download.
- The web User Area lets Cubasis AV users world wide communicate and exchange information.
- The Web pages also have sections for Education and Multimedia users.

2

Basic Methods

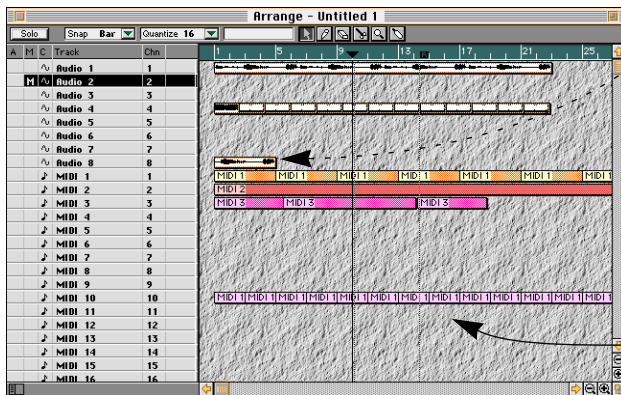
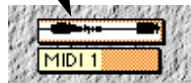
Why you should read this Chapter

In this chapter, none of the actual features of Cubasis AV are described. Instead, the chapter contains information about the general methods you need to employ when using Cubasis AV, plus some useful terminology. These methods are the same in every part of the program, whether you are making a basic recording, or using Cubasis AV at its most advanced level. To make your work with Cubasis AV as effective as possible, please take some time to read this chapter.

Cubasis AV Building Blocks

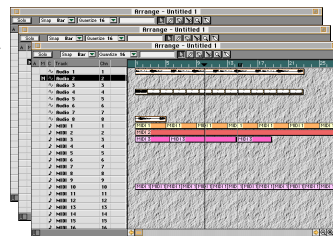
When you record audio or MIDI, your recorded sounds or MIDI signals are packed into “containers” called **Parts**.

Parts reside on **Tracks**. There are eight Audio Tracks and sixteen MIDI Tracks. The Parts and Tracks make up an **Arrangement**.



An Arrangement with the total of twenty four Tracks.

You can work on a number of Arrangements simultaneously. Together they form a **Song**.



Tools

When you are working with Cubasis AV, you need different tools in different situations. You may for example want to input notes using a Pencil tool, or delete notes using an Eraser tool. There are a lot of other tools as well.



Some examples of tools

What are the Toolboxes?

The various tools you may need in a certain situation are gathered in a Toolbox. This is essentially a “box” containing an icon for each tool. Each of the main windows in Cubasis AV has its own Toolbox, containing the respective necessary tools. All the main tools are described in the chapters “[Arrangement Editing](#)” and “[The MIDI Editors - General Information](#)”.



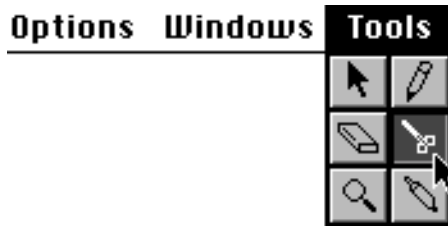
Some examples of Toolboxes

Selecting a Tool from a Toolbox

Using the Toolbox as a menu

You may simply choose tools from the menu bar:

1. Pull down the “Tools” menu on the menu bar.

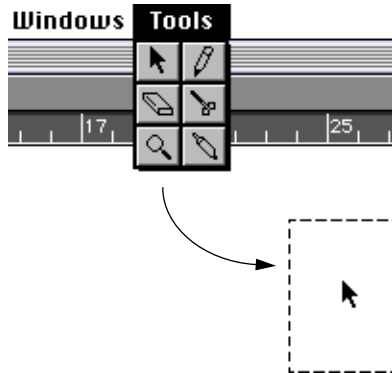


2. Position the pointer over a tool and release the mouse button.
The pointer takes on the shape of the selected tool.
3. When you have finished using a tool, simply choose another from the Toolbox.

Using the Toolbox as a window

You can "tear off" the Toolbox from the menu bar if you want it to appear as a separate window:

1. Pull down the "Tools" menu on the menu bar.
2. With the mouse button pressed, drag the Toolbox to a new place.
An outline of the Toolbox shows you where it will be positioned.



3. Release the mouse button.
The Toolbox appears in its new position.
- This can also be done by holding down [Control] and clicking wherever you want the Toolbox window.

4. If you want to move or close the Toolbox, proceed as with any Macintosh window.



When "torn off", the Toolbox has a title bar with a close box, just like an ordinary window.

- You can always select "Tools" from the menu bar, even if the Toolbox is already opened as a window.

Selecting a Tool from the Toolbar

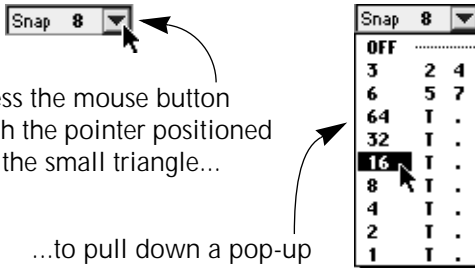
In the Arrange window, you also have the option to select tools from the Toolbar above the Part display.

Click on one of the tool icons to select a tool.



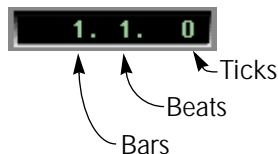
Pop-Up Menus

Throughout the program you will select values from pop-up menus. These differ a bit from the regular “menu bar menus”. Pop-up menus may be located anywhere in a window, and are not on a menu bar. But selecting is done similarly from all menus, pop-up or regular.



About Positions

Cubasis AV works with a resolution of 384 fractions (or ticks) per quarter note. You will often work with position values in the Arrange window. Positions in Cubasis AV are displayed as Bars, Beats (quarter notes) and Ticks.



The first Beat of the first Bar, in other words the beginning of the Song.

Setting Values

Throughout Cubasis AV you will find different values, such as meter position, tempo, volume, etc. There are several ways to change such values:

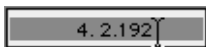
By typing

You can double click on a value field. The value is highlighted, and you can type in a new value and press [Return]. You can use the numeric key pad as well as the normal keyboard in most cases.

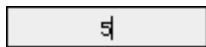
If you are editing a value that is “segmented”, such as a Song Position or a decimal number, you can use spaces, dots, commas or any character that is not a number, to separate the numerals. However, you don’t have to type in all the numerals. If you just type in a single number, you will change the largest numeral in the segmented value, and all the lesser numerals will be set to their lowest values.



Double clicking on this value (Song Position)...



...brings up a highlighted value box.



If you type a single value and press [Return]...



...the lesser numerals get their lowest values automatically.

By using the Mouse

You can use the mouse to either change a value by single steps or continuously scroll it up or down.

Method 1

1. **Position the pointer in the upper half of the value field to increase the value.**
If you want to decrease the value, position the pointer in the lower half of the value field.
2. **Click once.**
The value will increase/decrease by one step.
3. **Continue clicking until you have reached the desired value.**
 - **If you hold down [Shift] while clicking, the value will change in larger steps (often steps of ten).**

Method 2

1. **Press and hold down the mouse button with the pointer over the value.**
An arrow appears and the value will scroll up or down, slowly at first and then faster.



Pressing the mouse button with the pointer in the upper half of a value field.

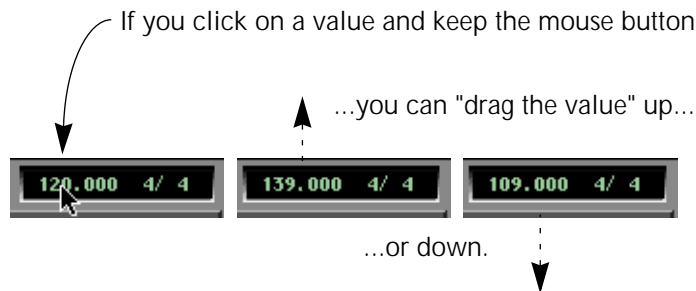


Pressing the mouse button with the pointer in the lower half of a value field.

2. **Release the button when you have reached the desired value.**
 - If you hold down [Shift] while using the mouse, the value will scroll in larger steps (often steps of ten).

Changing a value by dragging

If you click on a value and drag the mouse up or down with the button pressed, the vertical movement of the mouse changes the value, just as if you were dragging an invisible fader.



About changing "segmented" values

If you are using the mouse to change a "segmented" value such as a position or a decimal number, you can change any one of the "segments" individually. In a position value for example, you can change the bar, beat and tick values independently, just by positioning the pointer at the right numeral.

Clicking on the "Beats" value...



...will change this value

Naming

You can give names to Tracks, Parts and other items in Cubasis AV. To edit a name just double click on it. The text gets highlighted and you can type in the changes you want to make. You can use the arrow and [Backspace] keys, just as in any text-editing program.

Double clicking on the name...



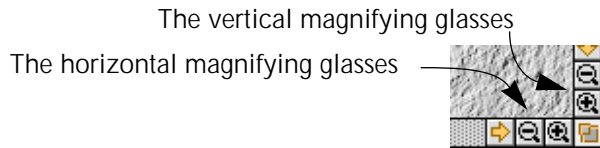
...highlights it and makes it ready to edit.

Window Techniques

Cubasis AV windows are regular Macintosh windows, which means standard Mac "window handling procedures" apply. You may move, resize, scroll and close windows using standard procedures. But there are also a couple of special features:

Changing the Magnification

In some of the windows a couple of magnifying glasses appear on each scroll-bar. Click on the magnifying glass with the plus sign to increase magnification. The magnifying glass with the minus sign will decrease magnification.



The magnification glasses on the left/right scroll bar change the horizontal magnification. The glasses on the up/down scroll bar change the vertical magnification. If you click on a magnifying glass and keep the mouse button pressed, the magnification factor will change continuously, allowing you to zoom in or out.

You can also change the magnification from the computer keyboard, using the following keys:

[G]	Decrease horizontal magnification.
-----	------------------------------------

[H]	Increase horizontal magnification.
-----	------------------------------------

[Shift]-[G]	Decrease vertical magnification.
-------------	----------------------------------

[Shift]-[H]	Increase vertical magnification.
-------------	----------------------------------

The Divider

The Arrange window is divided into two sections. The “border” between the sections is called the Divider. If you position the pointer on the Divider, the pointer takes on the shape of a hand. If you then click on the Divider and drag it in the direction of one of the sections, you will shrink that section and enlarge the other.



Dragging the Divider in the Arrange Window.

The Transport Bar



This is a special window that, among other things, contains the transport controls: Play, Stop, Record, Rewind and Fast Forward. These work much like the controls on a tape recorder. Read more about the Transport Bar in the [“Playback, Tempo and the Transport Bar”](#) chapter.

The Transport Bar differs from standard Macintosh windows. It doesn't have a title bar (the area at the top, used for dragging a window around on the screen). Instead you use the “handles”, at each side of the window, to move the Transport Bar. Also, the Transport Bar will never be obscured by other Cubasis AV windows, but always stays on top.

Dialog Boxes

When you select a function from a menu, sometimes a dialog box appears. This is a type of window, but it can't be moved or resized. After you have input the necessary information using the mouse and/or keyboard you close the dialog box by clicking on a button called “OK”, “Do It!” or something similar, or by pressing [Return] on the computer keyboard.

Even when you have a dialog box open you can still use the numeric key pad for the functions on the Transport Bar (Start, Stop and so on).

Using the Computer Keyboard

When you are working with Cubasis AV, the computer keyboard has several different uses:

Transport Controls

The Transport functions (such as Play, Stop, Record and so on) can all be managed from the computer keyboard. The keyboard commands for these functions are located on the numeric key pad, to the right of the main computer keyboard. See [page 75](#) in this book.

Keyboard Shortcuts

Many of the items on Cubasis AV menus have a computer keyboard equivalent - a “shortcut”. These keyboard shortcuts generally use keys on the left of the main computer keyboard. Those of you who have experience with the Macintosh will feel at home since Cubasis AV follows the standard guidelines when it comes to keyboard commands for functions like New, Open, Save, Close, Quit, Cut, Copy and Paste and so on.

How Keyboard Commands are displayed in this Manual

The following list shows how the “special” keys on the computer keyboard are displayed in this manual.

In this manual:	On some keyboards:
-----------------	--------------------

[Shift]	
---------	---

[Option]	
----------	---

[Command]	
-----------	---

[Tab]	
-------	---

[Return]	
----------	---

[Backspace]	
-------------	---

[Enter]	
---------	---

When the text says something like “press [Command]-[T]” this means that you should hold down the Command key on the Macintosh keyboard and press T once.

Undo

Cubasis AV has a wide-ranging Undo function. This means that if you regret your last action, you can Undo it. This is very helpful when something doesn't turn out as intended. Remember that it is only the *last* action that can be undone.

You Undo an action by selecting “Undo” from the Edit Menu, or by pressing [Command]-[Z] on the computer keyboard.



Often the menu item Undo tells you what will be undone at any given moment. In this case, "Undo Delete" means the last deletion will be undone.

If you wish to “Undo the Undo”, this is possible. The menu text changes to “Redo” after an Undo (for example “Redo Delete”). If the menu item is grey, nothing can be undone.

Real Time

Cubasis AV is a true real-time program. It has sophisticated multi-tasking procedures that let you do almost anything (like loading from, and saving to disk) without interrupting the music.

In some instances the notes sounding at the moment have to be cut off, but timing is never affected.

-
- In general, don't turn off playback or recording just because you want to try a command or a function, just do it!
-

3

Recording Audio

Selecting a sound source for recording

Before starting to record audio, you must decide what type of sound source you want to record. There are two basic options:

- **Recording a sound source connected to the audio inputs of the Macintosh.**
This could be a microphone, a mixer or any electrical musical instrument.
- **Recording audio from the internal CD-player.**
You may for example want to record loops and sounds from a Sample CD.

To “tell” the computer which type of sound source you want to record, proceed like this:

1. Quit Cubasis AV.
2. In the Finder, open the “Monitors and Sound” control panel and select the page with Sound settings.
3. Pull down the Audio Input pop-up menu and select the option you want (“External Microphone” or “Internal CD”).
4. Close the control panel and re-launch Cubasis AV.

Preparing a Track

1. **Select one of the eight Audio Tracks by clicking on its name field in the list.**

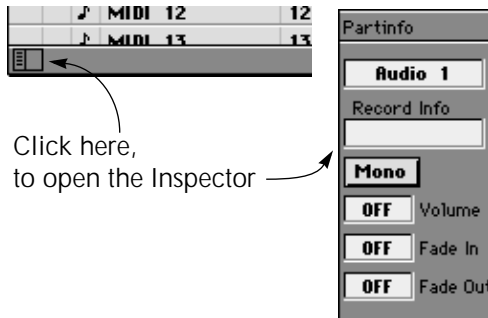
The Audio Tracks are the eight Tracks at the top of the list in the Arrange Window.

2. **Double click on the Track name, type in a new name for the Track and press [Return].**

Use names that correspond to the sounds or instruments you are going to record. This will make audio file handling easy later on!

3. **Open the Inspector.**

This is done by clicking on the Inspector icon below the Track list.



- 4. Decide whether you want to make a mono or a stereo recording, by clicking on the Mono/Stereo button.**

If you select Mono, the signal from the left input channel will be recorded.

-
- You can only change the Mono/Stereo setting if the Track is empty. Once you have recorded, imported or dragged any audio onto the Track, you cannot change the Mono/Stereo setting.
-

Selecting a folder for your Audio Files

When you record, audio files are created on your hard disk. Before you start recording for the first time in a new Song, you need to tell the program where to put the audio files:

- 1. In the Inspector, double click on the Record Info box.**
A file dialog appears.
- 2. Open the folder you want to use for your audio files and click “Select”.**
You can switch the audio file folder later on if you want to.

About Monitoring

Monitoring (listening to your sound source through Cubasis AV while recording) is automatically activated as soon as you select an Audio Track. More specifically:

The sound of the connected sound source will be monitored via the Audio Mixer if:

- An Audio Track is selected.
- The Track is unmuted.
- Cubasis AV is in Stop or Record mode.

In Play mode, monitoring is deactivated.

-
- Due to the design of the Macintosh, there will always be a slight delay in the monitored sound. If you prefer to listen to the sound source directly or via an external mixer, you can lower the level of the Audio Track in the Audio Mixer during recording. This will not affect the volume of the recorded sound.
-

Setting Recording Levels

In Cubasis AV, there is no input level setting. Instead, you have to set the recording level at your sound source, i.e. your mixer or your instrument. To check if the input level is OK, proceed as follows:

- 1. Make sure the correct Audio Track is selected.**

You should be able to hear the sound source through Cubasis AV.

- 2. On the Transport Bar, click on the button marked “AudioMix”.**

The Audio Mixer window opens. This window (described in detail in the chapter “[Mixing](#)”) contains eight “channel strips”, one for each Audio Track.



Click here to open
the Audio Mixer

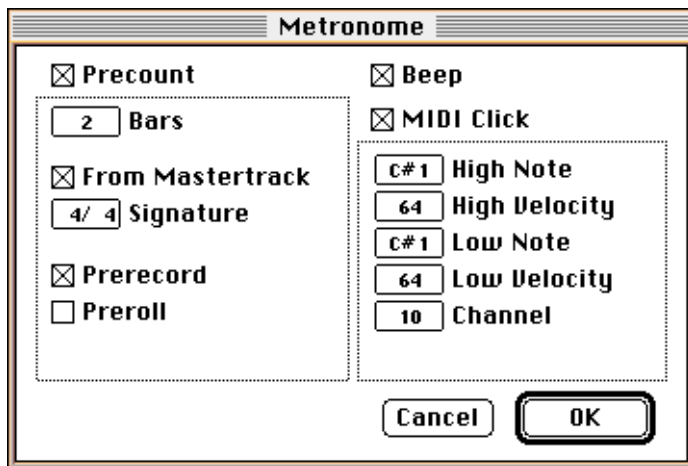


3. **Make sure that the volume fader for the selected Audio Track is set to “0”, and do the same with the the master fader to the right.**
4. **Make sure that the Treble and Bass knobs for the selected Audio Track are in their middle position.**
Neither the faders nor the Treble and Bass controls affect the actual recording - but they affect the level meters.
5. **Play or sing just as if you were actually recording.**
Now, the level indicator for the Audio Track (at the top of the channel strip) moves with the sound, giving you a rough impression of the input level.
6. **Set the out level on your sound source, so that the level indicator goes into the orange area occasionally.**
To avoid clipping (distortion), the meter should not go all the way up, or be in the orange area constantly. Unlike analog distortion, digital clipping results in clearly audible and very unpleasant distortion.
7. **To return to the Arrange window, click on the “Arrange” button on the Transport Bar, or press [Return].**

Setting up the Metronome Click and selecting a tempo

When you record audio, you don't have to use a metronome, or even any specific tempo. However, it is often practical to select a correct tempo before starting to record, since this will let you add MIDI music easily later on. To help you keep time when recording, you use the Metronome Click function. First, you need to set it up:

1. Pull down the **Options** menu and select **"Metronome..."**.
The Metronome dialog opens.



2. Make sure that “Precount” and “Beep” are activated.

When “Precount” is activated, the metronome will give you a “count in” before you start recording. You can select the length of the count in, by entering a value in the “Bars” field below.

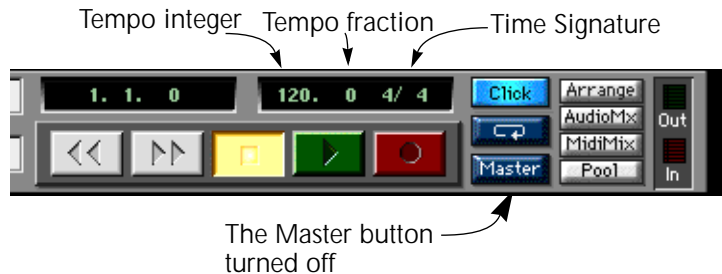
3. Click OK.

Now you need to set a suitable time signature and tempo for your music:

4. Make sure the Master button on the Transport Bar is *not* activated.

5. Set a Time Signature of your choice on the Transport Bar.

You can change each of the two Time Signature values separately to get Time Signatures from 1/2 to 16/16.



6. Activate the Click button on the Transport Bar and click on the Play button.

You will hear a metronome click sound.

7. Adjust the Tempo on the Transport Bar, until it feels right.

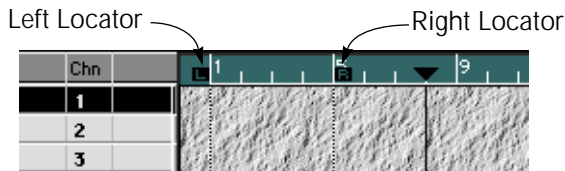
The Tempo setting is divided into integer ("coarse") and fraction ("fine") values. We suggest you start with the integer part and use the fraction value only for fine-tuning.

Recording from a specific point

Now that you're all set, it is time to actually record!

1. **Set up the Left Locator to where you want the recording to start and the Right Locator to where you want it to end.**

The Locators are markers, visible as two lines stretching over the Arrangement and with an "L" and an "R" flag in the ruler.



You move them by dragging the flags in the ruler, or by changing the Locator values on the Transport bar (for other ways of setting the Locator positions, see [page 82](#)).

-
- If you are not sure how long you want the recording to be, or prefer to deactivate recording manually, set the Right Locator to a very large value so that you will not intentionally reach it while recording.
-

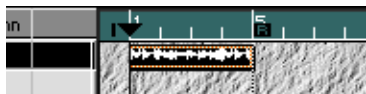
2. Make sure that the Cycle button (the middle blue button on the Transport Bar) is deactivated.



Cycle turned off

3. Click the Record button.
4. After the count-in, start performing.
5. When you are done, press Stop.

The program will now calculate an image file so that a waveform can be displayed. Depending on the length of your recording, this may take a few seconds, during which a dialog box shows the progress of the calculation. When finished, a Part will appear on the Track:



A Part on a Track

6. Click Stop again to return to the beginning of the recording, and click Play to listen to your performance.

Redoing the Recording

There are three ways you can redo a recording that you are not satisfied with:

Recording again over the existing Part

If you simply record again on the Track, you will get a new Part which overlaps the previous. The Track will play back fine, but you will be wasting hard disk space with unused recordings.

Using Undo

If you press Undo after Recording, the Part you just created will disappear and you can record again. However, the audio file still resides on the hard disk and there is a segment for it in the Pool (see [page 169](#) for details). You can always delete unused segments later, so this is nothing to worry about.

Deleting the Part

The final option is to manually delete the Part and then record again on the Track.

- **If you delete the Part with the Eraser (or by selecting it and clicking [Backspace]), it disappears, but the segment and the audio file are not deleted (just as when you use Undo, see above).**

- **If you select the Part, hold down [Command] and press [Backspace], a dialog appears, asking you if you also want to delete the audio file. To do this, click OK.**

This is the method to choose if you are sure you permanently want to delete the recording.

Recording more on the same Track

To record more on the same Track, proceed as follows:

1. **Move the Left Locator to the next position where you want to start recording.**

This can be at a “free” area on the Track, or at some place where something is already recorded, as described below.

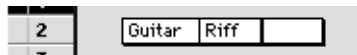
2. **Move the Right Locator to where you want the recording to stop.**

3. **Activate recording just as you did the first time on the Track.**

A new file is automatically created for you, as described below.

About overlap

When you record again, where something has already been recorded on the Track, you will get a new Part which overlaps the previous one(s). When you play back, only the Parts that you can *see* are played back. Let’s say the Track contains a long Part, and a shorter Part is recorded “on top of” and in the middle of the longer one. When the Track is played back, you will hear the first Part (the longer one) up until the start of the shorter Part. The short Part will then be played until its end and then you will hear the end of the longer Part.



During the “riff” Part, the “guitar” Part is silenced.

Recording the Next Track - Overdubbing

Recording the next Track is done just as with the first. Just select another Track, name it and record as described on [page 44](#). When you activate recording, you will hear the previously recorded Tracks together with the performance you are currently recording.

Activating Recording from Play mode - Punch In and Out

If you have used multi-track tape recorders you will know about a technique called punching in. This is when you activate recording while the tape is rolling. If for example you have made a mistake in the middle of a chorus, you can play back from the beginning of the chorus and just before the flawed section, punch in and replace that section with a new performance.

Punch out is when you deactivate recording without stopping playback. If – in the example above – the chorus is followed by a verse which is perfectly OK, you would punch out at the end of the chorus so that you don't record anything on the verse.

In Cubasis AV, the following guidelines apply:

- **Cubasis AV always punches out automatically at the Right Locator.** This means, that if you are recording and the Song Position passes the Right Locator, recording is automatically deactivated.

- **You can punch in and out manually on Audio Tracks, by clicking the Record button (or pressing [*] on the numerical keypad) in play mode.** However, you cannot punch in and out repeatedly without stopping playback in between. This is true no matter which method you use for activating recording.

The same is true for switching Tracks while recording. If you do this, recording is disabled (but playback continues). To activate recording again, you have to stop first.

4

Recording MIDI

Preparations

Activate MIDI Thru!

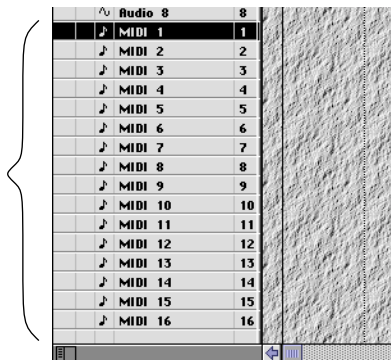
Cubasis AV is best used with MIDI Thru activated and the connected MIDI sound source in Local Off-mode. Therefore:

-
- Make sure that MIDI Thru is activated on the Options menu.
-

Selecting a MIDI Track for recording

There are sixteen MIDI Tracks in Cubasis AV, located below the eight Audio Tracks in the Arrange window. Each Track has its own MIDI Channel (1 - 16, indicated by the number in the "Chn" column). If you have a MIDI sound source that can play different sounds for different MIDI channels (usually called a "multitimbral" sound source), you can control up to 16 different MIDI sounds at once, one for each MIDI Track.

The MIDI Tracks



First, you need to select a Track to record on:

1. In the Track list in the Arrange window, click on the name of one of the Tracks.

At this stage, you can name the Track if you want to. It is often very practical to use a Track name that corresponds to the music or the sound you want to record on the Track:

2. Double click on the Track name in the list.

A name box opens.



3. Type in the desired name of the Track and press [Return].

Selecting a sound for the Recording

If you use a typical multitimbral MIDI sound source, it can receive MIDI signals on 16 different MIDI channels. For each channel, you can select a sound (“Programs”, “Presets”, “Patches”, “Tones”, “Voices” or whatever they might be called). Since MIDI channel 1-16 correspond to MIDI Track 1- 16 in Cubasis AV, you can set up the MIDI sound source so that you have different sounds for each MIDI Track.

There are two ways to select a sound for the Track’s MIDI channel:

Using the Instrument’s front panel

Normally you can select sounds – for each MIDI Channel – directly from the front panel on the instrument. If you choose this method, please refer to the instrument’s operation manual for details.

Using the Inspector

You can also select sounds directly in Cubasis AV.

-
- Your instrument must be set up to receive MIDI “Program Change” messages for this to work. Refer to the instrument’s operation manual for instructions on how to do this.
-

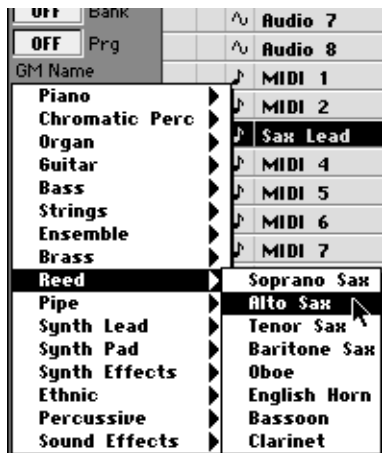
1. **Click on the Inspector icon, below the Track list.**
The Inspector appears.

2. Click in some empty part of the Part Display (the area to the right of the Track list).

This is to make sure no Part is selected. The top text in the Inspector now says "Trackinfo" and below this, the name of your Track is displayed. This is your verification that the Inspector actually shows the settings for the right Track (the selected one).

3. If you use a General MIDI compatible sound source, click on the "GM Name" field to pull down the General MIDI program name pop-up menu.

The pop-up menu consists of 16 submenus, each containing 8 GM instruments. Selecting one of them will send out the appropriate MIDI Program Change message to your MIDI sound source.



4. If you use a non-GM sound source, you can instead enter a Program Change number in the Prg value field.

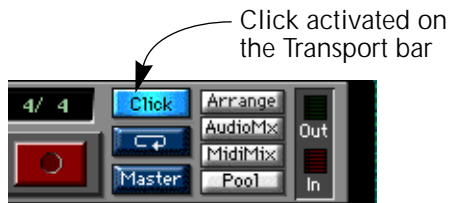
In MIDI, Programs are always numbered continuously, and in Cubasis AV they are numbered from 1 upwards. Your instrument might use some other numbering scheme, so you might need to experiment a bit before you get the right sound.



Changing this setting sends out MIDI Program Change numbers.

Click

Recording into a sequencer is done in time with a metronome click. So, to make sure you hear the metronome, check that the Click button is activated. If it isn't, click on it.



This activates a click directly from the computer. If you want a MIDI metronome, check the Metronome dialog (reached from the Options menu, see [page 366](#)).

Tempo and Time Signature

To set a Tempo and Time Signature for your recording, proceed as follows:

1. **Make sure the Master button on the Transport Bar is turned off.**
You need to activate the Master (Track) if you want tempo changes in your song. Otherwise it is best turned off. See [page 76](#).
2. **Set a Tempo and a Time Signature of your choice in the Tempo/Time Signature box on the Transport Bar.**

Recording from a specific point

1. Set up the Left Locator to where you want the recording to start and the Right Locator to where you want it to end.
2. Click on the Record button or press [*] on the numeric key pad.
3. After the count-in, start playing your MIDI instrument.
4. When you are done, click the Stop button.
A Part appears on the Track.
5. Click Stop again to return to the beginning of the recording, and click Play to listen to what your performance.

Now all you have to do to hear what you recorded, is to click the Play button, or press [Enter] on the numeric key pad.



Activating Play

Redoing the Recording

If you aren't satisfied with the recording, you can try either of the two following methods:

Using Undo

If you haven't made any changes to the Arrangement since you recorded, you can simply Undo the recording by selecting Undo from the Edit menu. Remember you can only Undo your last action.

Deleting a Part

You can delete a recording (a Part) by clicking on it and selecting Delete from the Edit menu or pressing [Backspace].

Recording more on the same Track

If you wish to record more on the same Track, proceed as follows:

1. **Set up the Left Locator to where you want the new recording to start and the Right Locator to where you want it to end.**

-
- You cannot activate recording if the Locators are positioned in "reverse order".

2. Activate Recording by clicking on the Record button or pressing [*] on the numerical keypad.

You will hear a count-in just as you did the first time, and then recording starts from the Left Locator position.

When you have finished recording, you will probably get a new Part, after the first one.



The second Part appears after the first.

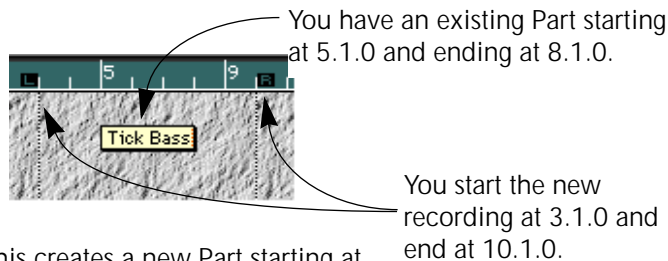
You may also start recording from Play mode ("Punch In"), see [page 63](#).

How Parts appear when you record

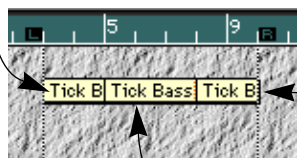
When you record, the following rules apply:

- Recording from one point to another creates a Part that spans these two points.
- Recording again on the same Track, between the same points or within the Start and End points of the existing Part creates *no* new Part. The music is added to the existing.
- If "Prerecord" in the Metronome dialog box is active (see [page 364](#)), recording during the Precount will extend the Part to the left.

- In other cases (like starting recording in an empty section of the Track, recording over Parts and recording out of existing Parts into empty areas of the Track), new Parts are only created where there weren't any before. An example might clarify this:



This creates a new Part starting at 3.1.0 and ending at 5.1.0...



...the old one between 5.1.0 and 8.1.0 is kept, but music gets added to it...

...and finally there is a new part created between 8.1.0 and 10.1.0.

Recording the next Track

To record on the next Track, proceed as follows:

- 1. Select the next Track by clicking on its name field.**
- 2. Select a sound for this recording, just as with the first.**
Again, this can be done either on the front panel of the instrument or from the Inspector - it all depends on your instruments and which method you prefer.
- 3. Set the Left Locator to the position where you want the recording to begin, and the Right Locator to the position where you want it to automatically end.**
- 4. Activate Recording, wait for the count-in and start performing.**
Now, if you have everything set up OK, you should hear your first Track while you record the second.

-
- If you activate the Preroll feature, you will hear the last bar(s) before the Left Locator played back instead of the metronome click count-in. This is described in detail on [page 364](#).
-

Activating Recording from Play mode - Punch In and Out

As with Audio Tracks, you can Punch In and Out on your MIDI recordings, following these rules:

- **Punch In** is done manually, by activating recording anytime during playback.
- **Punch Out** is either done manually, by deactivating recording without pressing the Stop button, or automatically, when the Song Position passes the Right Locator.

About punching in on long notes

When you activate recording in Cubasis AV, already recorded notes are never cut off, they will play to their end just as they did before you started this recording.

About punching in on Controller or Pitch Bend data

Watch out when punching in on recordings with Pitch Bend or Controller data (modulation wheel, sustain pedal, volume etc.), since this may lead to strange effects (hanging notes, constant vibrato etc.).

5

Cycled Playback and Recording

What can I do with the Cycle?

Cubasis AV can play back and record in a Cycle – a loop. You decide where the Cycle starts and ends by setting the Left and Right Locators. When Cycle is active you can repeatedly listen to a section of the Arrangement, and record, adding more on each lap etc. Cycled playback is also convenient when making adjustments in the Mixer windows.

Setting up the Cycle

1. Set the Left Locator to the position where you want the Cycle to begin.
2. Set the Right Locator to the position where you want the Cycle to end.



The Left and Right Locator

3. Click on the Cycle button so that it gets activated, or press [/] on the numeric key pad.

The Cycle button



Playing back the Cycle

When you play back with Cycle activated, the section between the Locators gets repeated indefinitely.

You can use any or all of the functions while the program is playing back. This fact allows you to use Cycled playback for a number of things, many of which you will learn about later in this manual:

- Rehearse a part before recording.
- Try different settings in the Mixer windows.
- Mute Tracks to try out variations on an Arrangement.
- Make adjustments in the Inspector, apply Quantize etc.
- Make adjustments to the sounds in your instruments or try out a Track with another sound.
- etc.

Recording in Cycle Mode

Cycle Recording works differently for MIDI Tracks and Audio Tracks. The text below describes the procedure and results of MIDI Cycle Recording; Audio Cycle Recording is described on [page 69](#).

With MIDI Tracks

When you record in Cycle mode on a MIDI Track, you can add new notes to the Part for each Cycle “lap”. You may for example use it when recording a drum pattern - record the kick drum on the first lap, the snare on the next and so on.

- 1. Set up the Cycle and activate the Cycle button.**
- 2. Set up a Track to record on.**
- 3. Click the Record button.**
- 4. After the count-in, start playing.**
- 5. Keep playing on each lap of the Cycle until you are done.**
The new notes are added to the existing ones.

-
- If you punch out manually by clicking the Record button after each recorded lap, you can listen to the latest recording, and use the Undo command to delete it if you are not satisfied. Then, simply punch in again and try again on the next lap.
-

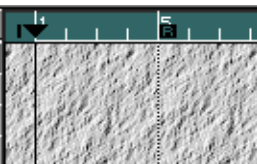
6. Stop Cubasis AV or punch out manually by clicking on the Record button again.

Switching MIDI Tracks while recording

You can record on more than one Track while in the Cycle (this only works with MIDI Tracks):

1. Set up a few Tracks on which to record. Also set up the instrument(s) so that they play the right sounds on these MIDI Channels.

A	M	C	Track	Chn
		♪	Mute gt	8
		♪	Fretless	9
		♪	Kit	10
		♪	Taiko	11



A few Tracks set up for recording a four bar groove.

2. Enter recording in Cycle mode.
Record on the first Track.

3. **Without stopping, select a new Track in the Track list or use the [↑] and [↓] keys to step through the Tracks.**
Selecting a new Track automatically routes your playing to the new sound.
4. **Record on this second Track as with the first.**
5. **Keep recording on different Tracks until you are finished.**
6. **Stop Cubasis AV or punch out manually.**

With Audio Tracks

When you record in Cycle mode on an Audio Track, the new music is not simply added to the old. Instead you will get a separate “take” for each recorded lap, and can decide afterwards which one to use. Let’s say that you want to record an instrumental solo passage or a lead vocal:

1. **Set up the Cycle and activate the Cycle button.**
2. **Set up a Track to record on.**
Remember to name the Track, to make it easy to find the recorded audio files later on.
3. **Click the Record button.**

4. After the count-in, start performing.

For each lap, try a new take, until you are satisfied.

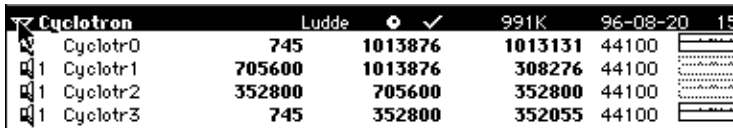
5. Stop recording.

If you listen to the recording, you will only hear the last recorded lap. To select another take, you need to open the Pool:

6. Click on the Pool button on the Transport Bar.

The Pool window opens. This window (described in detail on [page 168](#)) contains a list of all audio files used in the Song.

7. Locate the file (one of the files with the name of the Track you recorded), and click on the triangle to the left of the name, so that it points down.



The screenshot shows a window titled 'Cyclotron' with a sub-header 'Ludde'. It contains a table of audio files. The first column has a small triangle icon next to each row. The second column is the file name, the third is a duration, the fourth is a file size, the fifth is a date, and the sixth is a segment count. The first row is highlighted.

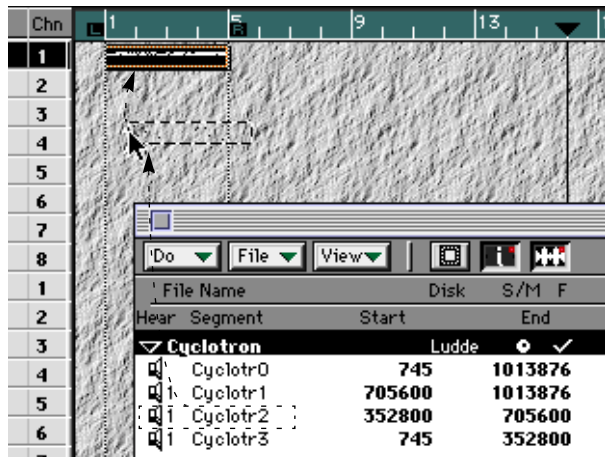
	Cyclotr0	745	1013876	1013131	44100	15
1	Cyclotr1	705600	1013876	308276	44100	
1	Cyclotr2	352800	705600	352800	44100	
1	Cyclotr3	745	352800	352055	44100	

A number of names appear below the file name. These are *segments*, sections of the audio file. You will find one segment for each “take” you recorded, and one segment that covers the whole audio file (all takes).

8. To listen to one of the takes, simply press the mouse button with the pointer on the Speaker symbol to the left of the segment.

You will hear the segment played back as long as you keep the mouse button pressed.

9. To try one of the takes in the Arrangement, you need to arrange the windows on the screen, so that you can see the Pool window and the Part display in the Arrange window at the same time.
10. Then click on the segment name, drag the segment into the Arrange window and release it on the selected Audio Track, at the Left Locator (on top of the original Part).



A new Part is created, obscuring the original Part.

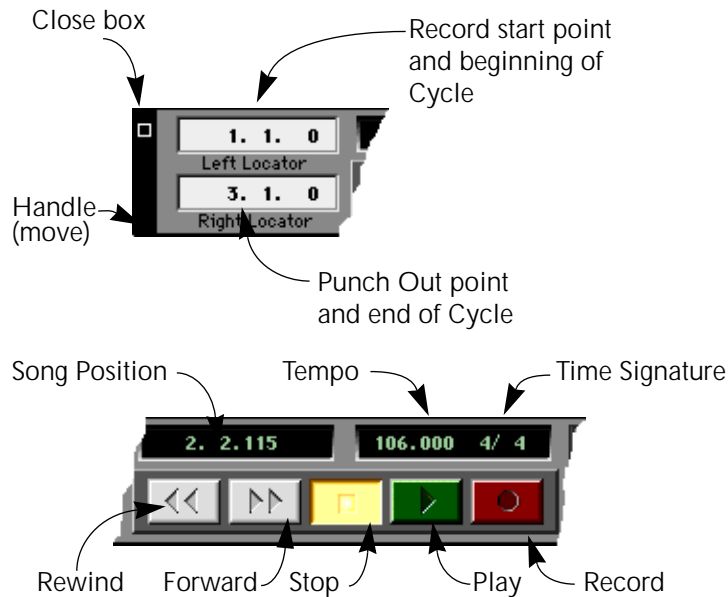
11. Try the different takes this way, until you find the best one.
If you want to “go back” to a take you previously tried out, you can either drag it from the Pool again, or delete the Parts that are “on top” of it in the Part Display, using the Eraser tool.

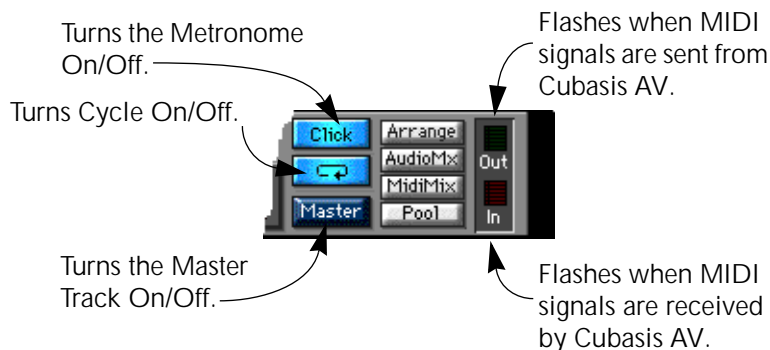
6

Playback, Tempo and the Transport Bar

The Transport Bar

Below, you will find a brief description of each control on the Transport Bar:





Hiding and showing the Transport Bar

To hide the Transport Bar, either click its Close box or select “Hide Transport” on the Windows menu. To bring it back, select “Show Transport” from the Windows menu.

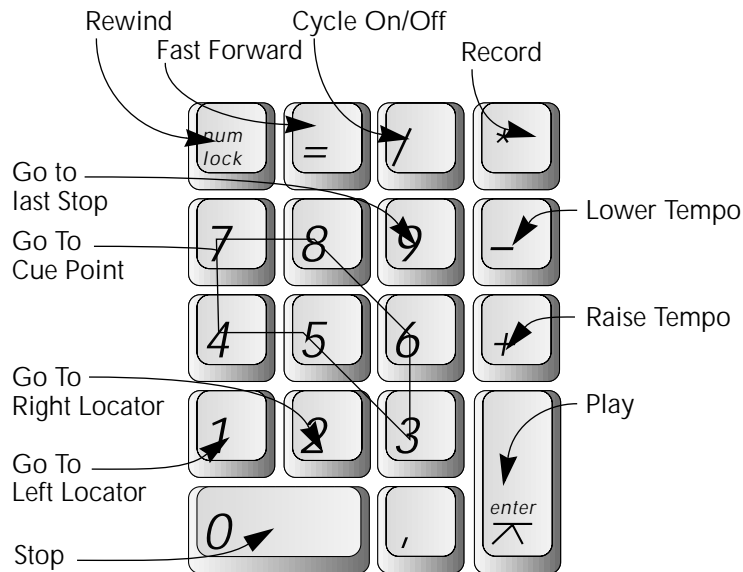
When the Transport Bar is hidden, you can still access all its functions via the computer keyboard. See below for a list of Transport Bar commands.

Moving the Transport Bar

You can put the Transport Bar anywhere you want it, by dragging the handles. It will always stay on top of the other Cubasis AV windows.

The Numeric Key Pad

The numeric part of the computer keyboard is used for many Transport Bar operations. Some of these are described in more detail later in this chapter.



The Space bar also functions as Stop button.

Basic Tempo and Time Signature Handling

Transport Bar and Master Track Tempo

There are actually two sources for the tempo in Cubasis AV:

- When the song uses a steady tempo throughout, you don't need to use the Mastertrack and can have the Master button on the Transport Bar turned off and simply set the right tempo directly on the Transport Bar. The tempo can be adjusted at any time, even while playing back.
- When the song contains tempo changes, you need to use the Master Track, (which is Cubasis AV's tempo Track and more! See the chapter "[The Master Track](#)"). For those tempo changes to actually "happen" on playback, the Master button on the Transport Bar must be activated. This is all discussed in the chapter "[The Master Track](#)".



The Tempo setting on the Transport Bar is used.



The Tempi set on the Master Track are used.

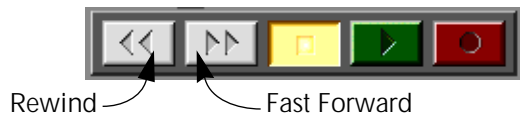
Setting the Transport Bar Tempo

The tempo on the Transport Bar is adjusted like any other value (see [page 21](#) in this book). The value is in BPM (Beats Per Minute). The integer and fraction part can be adjusted separately, if necessary.

Setting the Song and Time Position

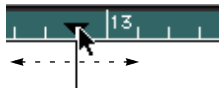
Using Fast Forward and Rewind

The Song Position can of course be moved using Fast Forward or Rewind. If you hold down [Shift] while clicking the button, Rewind/Fast Forward is much faster.



By moving the Song Position in the Ruler

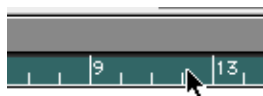
You can drag the Song Position Pointer directly in the ruler simply by pointing at the triangle, pressing the mouse and dragging left or right.



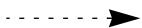
Dragging the Song Position.

By clicking in the Ruler

If you click somewhere in the ruler, the Song Position Pointer is moved there.



Click in the ruler...



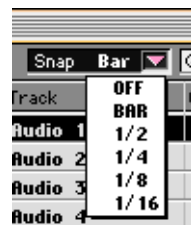
...to move the Song Position Pointer.

About the Snap Value

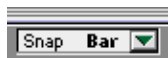
When you change the Song Position in the ruler, the Snap value helps you find exact positions quickly. It does this by limiting the possible points for positioning to Bar, half note, quarter note, etc. Snap can also be set to Off; then all movements are unrestricted.

The Snap value is set with the Snap pop-up at the top of the Arrange window.

Value	Description
Off	Any position can be used.
Bar	Movement is restricted to exact bar lines.
1/4 to 1/16	Movement is restricted to the selected note value.



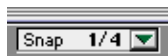
The Snap pop-up



If Snap is set to Bar...



...the Song Position can only be dragged to exact bar lines.



If Snap is set for example to 1/4...



...the Song Position can be put on any quarter note position.

Changing Position values on the Transport Bar

You can adjust the Position values on the Transport Bar as described in the chapter “[Basic Methods](#)”. The Song pointer is moved accordingly.

Making relative Position changes

If you double click on either position value and enter a new one, preceded by a “+” or “-” character, the song position is changed accordingly.

Double click...



...enter a value
preceded by
+ or - ...



...and the value
gets added to the
existing position.



Returning to the beginning of the Song

If the Song is stopped and you click the Stop button again (or press [0] on the numeric key pad), the following happens:

- The Song Position is moved to the Left Locator.
- If the Song Position is already at the Left Locator or to the left of it, the Song Position is moved to the beginning of the Song.

This means that you can always click twice on the Stop button to return to the beginning of the Song.

Going to the last Stop Position

If you press [9] on the numeric key pad, the Song Position moves to the place you last stopped at.

Moving to the Locators

- If you press [1] on the numeric key pad, the Song Position is moved to the Left Locator.
- If you press [2] on the numeric key pad, it is moved to the Right Locator.

Using Cue Points

Cue points are used to quickly locate to any position. If for example you often find yourself jumping to the beginning of the first chorus, set up that position as a cue point.

Programming Cue Points

1. **Set the Song Position to where you want the Cue Point to be located.**
2. **Hold down the [Shift] key and press any of the keys [3] to [8] on the numeric key pad.**

The key is now programmed with that position.

Locating to Cue Points

If you press any of the keys [3] to [8] on the numeric key pad, the Song Position is moved to the position programmed for that key.

Cueing

Cueing is when you fast forward through the music while playing it. You might have done this on a multi-track tape recorder. The big difference with Cueing in Cubasis AV is that the music is played back with normal pitch.

-
- Cueing only works with MIDI Tracks; Audio Tracks are silenced during Cueing.

1. Hold down the [Command] key.
2. Click and hold down the mouse button with the pointer over the Fast Forward button.
 - To change the speed of cueing, drag the mouse left/right.

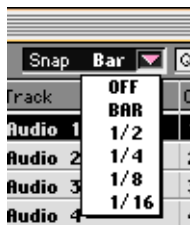
Locators

As described in the previous chapters, the Left and Right Locator are crucial for recording, setting up a cycle, etc. There are several ways of setting the Locator positions:

Setting the Locators by dragging in the Ruler

1. Set the Snap value.

The Snap value restricts the positions to which you can move the Locator, as with the Song position, see [page 79](#).



The Snap pop-up

2. Point at the desired Locator flag in the ruler, and drag left or right.



Dragging the Left Locator

3. Release the mouse button.

Setting the Locators by clicking in the Ruler

1. **Set the Snap value.**
See above.
2. **If you wish to position the Left Locator, hold down the [Option] key.**
To position the Right Locator instead, hold down the [Command] key.
3. **Click somewhere in the ruler.**
The Locator appears at that position.

Setting the Locators on the Transport Bar

You can also adjust the Left and Right Locator position by changing the numerical values in the Locator boxes on the Transport Bar.

Making relative Position changes

Just as with positions (see [page 81](#) in this book) you can double click and enter a new value, preceded by a “+” or “-” character. When you hit [Return] the Locator is moved relative to its current position.

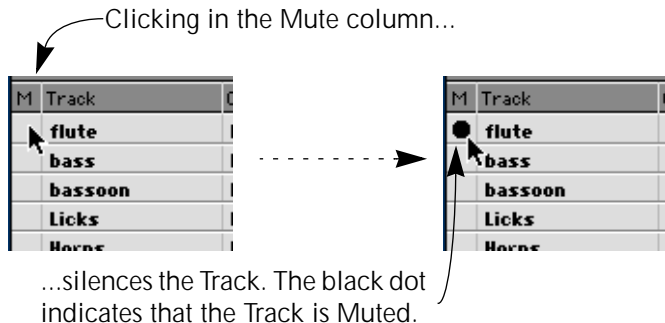
7

Mute and Solo

What is Muting?

Using the Mute function you can silence some of the music without actually deleting it. This is useful in many situations; you may for example want to try out different variations of an Arrangement by muting some parts of the music, or listen only to the rhythm section of a song etc.

Muting a Track



To “unmute” a Track, simply click on the black dot.

-
- If any notes are sounding at the moment you Mute a Track, they are allowed to play until their end.
-

What is Solo?

The Solo function works as an “inverted” Mute - that is, if you Solo a Track, all other Tracks get Muted. This is useful if you want to listen closely to the contents of a Track, and don’t want any other music to interfere. Solo a Track like this:



Click on the Solo button in the upper left corner of the Arrange Window to activate Solo.

The highlighted Solo button indicates that Solo is activated.

All Tracks except the currently selected, get Muted.



If you select another Track, it will get Soloed instead.



Instead of clicking on the Solo button, you can press [S] on the computer keyboard. You can unmute one or more Tracks while in Solo mode if you want to hear, for example, just how two or three Tracks sound together.

To deactivate Solo, click on the Solo button (or press [S]) again. All Tracks will return to the Mute status they had before Solo was activated.

8

Mixing

Introduction

This chapter describes the general procedures of adjusting levels, pan, EQ and effects, to create a final mix of the eight Audio and sixteen MIDI Tracks.

Mixing is done in two different windows in Cubasis AV, the Audio Mixer and the MIDI Mixer.

About the differences between the two Mixers

It is important to understand the difference between the two Mixers:

- **The Audio Mixer affects the actual audio playback.**

For example, the volume faders in the Audio Mixer will really attenuate or boost the volume of the audio, and the pan controls will determine where in the stereo image (left - middle - right) the sound appears when you play it back.

This also means you have to be careful when raising the channel volumes - it's fully possible to cause distortion by setting to high levels. If this happens, simply lower the faders until the distortion disappears.

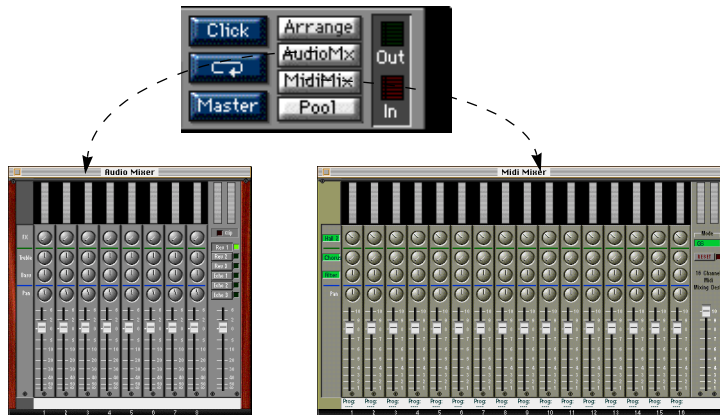
- **The MIDI Mixer sends out MIDI messages to the connected MIDI sound source.**

For examples, the volume faders in the MIDI Mixer send MIDI Volume messages (Controller 7) on each channel, and the pan controls send MIDI Pan messages (Controller 10).

- For this to work properly, your MIDI sound source must be able to receive the appropriate MIDI signals. Most modern MIDI instruments are, but if you're in doubt, consult your instrument's documentation.

Opening the Mixers

On the Transport bar you will find one button for each of the Mixers. Clicking these opens the corresponding window.



Click the AudioMix button to open the Audio Mixer, and the MIDIMix button to open the MIDI Mixer.

General Mixing Procedures

As you see, the two Mixer windows look much the same, apart from the labels on some of the controls, and the amount of channels. Even though the two Mixers have totally different functions (one affecting the audio being played back, the other sending out MIDI messages), the controls are handled in the same way for both Mixer windows:

The Channel Faders

These work just like volume faders on a normal mixer. Just click and drag the fader handles.

- **If you click directly anywhere on the fader, the fader handle is immediately set to where you click.**
- **If you hold down [Command] and click anywhere on a fader, it is automatically set to the value "0".**

For Audio Tracks, the level "0" means the recorded signal is neither boosted nor attenuated. For MIDI Tracks, this means a MIDI volume value of 100 (out of 127) is sent out.

The Knobs

These include Pan, EQ and Effect controls. There are two ways to change their settings:

- **Press the mouse button with the cursor on the knob and drag, “turning” the knob around.**

or

- **Click directly on the knob, at the position you want to turn it to.**
The knob is immediately “turned” to where you click.

Performing the Mix

To mix, simply play back the music and adjust the controls in each window to your liking.

If you want dynamic changes, for a example a fade out or in at some point in the song, you can use the Volume and Fade settings in the Inspector for each Audio Part (see [page 155](#)).

The Audio Mixer Controls

Below follows a description of the controls in the Audio Mixer window:

For each Channel

Control:	Description:
Meters	These show the playback level for the channel. To avoid distortion, you should make sure the meters don't regularly go into the orange field (if they do, lower the volume fader for the channel).
Fx	This is used to set how much of the selected effect (see below) that should be applied to this channel.
Treble	This is a tone control, used to increase or reduce the high frequency content of the audio.
Bass	This is a tone control, used to increase or reduce the low frequency content of the audio.
Pan	For Audio Tracks recorded in mono, this is used to position the audio in the stereo image (left/middle/right). For stereo Audio Tracks, the Pan knob serves as a stereo balance control.
Volume	This is used to adjust the level of the audio channel. The fader ranges from $-\infty$ (the channel fully silenced) through 0 (no attenuation or boost) to $+\infty$ (the channel boosted by 6 dB).



-
- The volume fader settings are relative to any Volume settings made for each Part in the Inspector! This means that if you have set the Volume for a Part to 64 (about half the full value), *this* will be the volume you get with the mixer fader set to 0.
-

Master Section

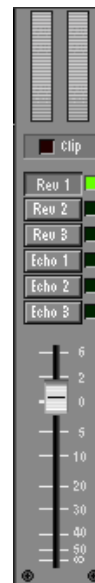
Control:	Description:
----------	--------------

Meters	The meters show the overall output level for the left and right channel. As with the channel meters, these meters should go into the orange field only occasionally.
--------	--

Clip	If the Clip indicator lights up, the sound will be distorted and you should reduce the master level (see below). The Clip indicator will not go out of itself, you have to click on the indicator to “reset” it.
------	--

Effect switches	This is used to decide what type of effect to use on those channels where effect is applied with the FX knob. All channels share one effect. The six effect settings are described below this table.
-----------------	--

Volume	This is used to adjust the overall output level from all the Audio Tracks.
--------	--



About the Effects

The Audio Mixer contains a global Effect switch, with a choice of six effect variations. With the FX knobs, you can decide how much effect should be applied to each channel. The following six effects are available:

Reverb 1	A short reverb, simulating the sound of a medium-small room.
Reverb 2	A longer reverb, simulating the sound you would get in a large hall.
Reverb 3	A very long and deep reverb, suitable for special effects.
Echo 1	A classic repeat echo with a relatively short delay time.
Echo 2	A special setup with double delay times for extra deep echo.
Echo 3	As Echo 2, but with longer delay times.

The MIDI Mixer Controls

Below follows a description of the controls in the MIDI Mixer window, from left to right.

- Please note that some of the controls are only available in GS or XG mode, and require that your instrument is GS or XG compatible. See [page 106](#).

Effect selectors



These are three green fields located to the left of the channel sections, that indicate the functionality of the three top rows of knobs. Two of the fields also serve as pop-up menus, for selecting effects in GS/XG Mode.

The Reverb Type pop-up

The contents of the pop-up menu differs depending on the setting of the Mode pop-up to the right in the MIDI Mixer window:

GM Mode	No reverb selection available. The green field is labelled "OFF", and the top row of mixer knobs has no functionality.
GS Mode	The pop-up contains a selection of six reverbs and two delays, according to the GS specifications.
XG Mode	The pop-up contains a selection of eight different reverb types, according to the XG specifications.

To select a reverb type in GS or XG mode, position the pointer on the green Reverb Type field, press the mouse button and select one of the options on the pop-up menu that appears. A MIDI Message is sent to your connected sound source, and the name of the selected reverb type is shown in the green field, as a label for the top knob row.



The reverb type pop-up in GS mode

The Chorus Type pop-up

The contents of the pop-up menu differs depending on the setting of the Mode pop-up to the right in the MIDI Mixer window:

GM Mode	No chorus selection available. The green field is labelled "OFF", and the second row of mixer knobs has no functionality.
GS Mode	The pop-up contains a selection of chorus, flanger and short delay effects, according to the GS specifications.
XG Mode	The pop-up contains a selection of chorus, celeste and flanger effects, according to the XG specifications.

As with the Reverb Type pop-up, the name of the selected chorus type is shown in the green field, as a label for the second row of knobs.



The Chorus Type pop-up in XG mode

The Filter label field

The third green field has no pop-up menu. It simply serves as a label for the third row of knobs in the MIDI Mixer. The label changes automatically depending on which Mode is selected to the right in the window:

GM Mode	The field is labelled "OFF", and the third row of mixer knobs has no functionality.
GS or XG Mode	The field is labelled "Filter", indicating that the third row of knobs is used to control the Filter cutoff (brilliance) in the connected sound source.

Controls for each Channel

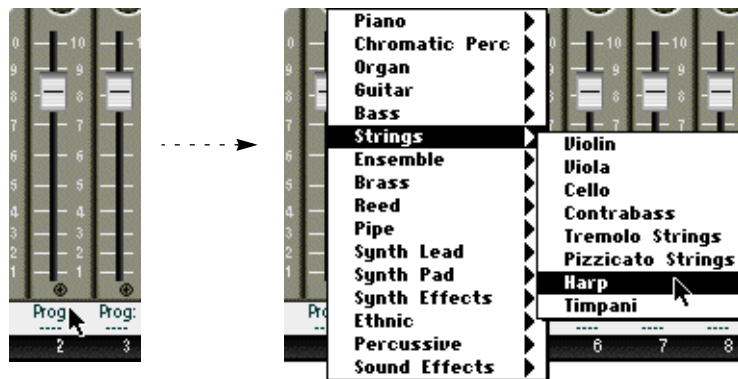
Control:	Description:
----------	--------------

Meters	These show the playback level for the channel (actually the velocity values of the notes being played).
Reverb Amount	Only available in GS or XG mode. Used to set how much of the selected reverb effect (see above) should be applied to this channel.
Chorus Amount	Also only available in GS or XG mode. Used to set how much of the selected chorus effect (see above) should be applied to this channel.
Filter	Also only available in GS or XG mode. Used to adjust the timbre of the sound. Turn the knob to the left for a darker sound, to the right for a brighter sound.
Pan	This is used to position the sound in the stereo image (left-middle-right).
Volume	This is used to adjust the level of the channel's sound.



The Prog Name field

At the bottom of each Mixer Channel “strip”, there is a field labelled “Prog”. Clicking on this field opens a GM Program Name pop-up, just like in the Inspector. Use this to select a sound for each MIDI Channel/Track.



Please note that Channel 10 is always used for drums in General MIDI. Therefore, you cannot select regular instruments for this channel. In the GS and XG Modes, however, you can use the Prog pop-up to select one of nine different Drum Kits for Channel 10.



Master Section

The controls in this section (in the rightmost area of the Mixer) are common to all sixteen MIDI channels.

Meters

These show the overall “output level” from all the Tracks (actually, the velocity values).

The Master Volume fader

Governs the total volume for all MIDI Channels. The Master fader does this by scaling the MIDI Volume values set with the Channel Faders. Therefore:

- **For the channels to get the exact volume values set with each Channel Fader, the Master fader should be at its top position.**

The Mode pop-up



This setting determines which functions are available in the MIDI Mixer. Set this to the type of instrument you have:

-
- | | |
|----|--|
| GM | Stands for General MIDI, a standard that is supported by a lot of instruments. This is the basic Mixer mode, that allows you to set volume, pan and Program Change for each channel. |
| GS | This is a standard used by some Roland instruments. It has the mixer features of GM, but adds effects, filter control and selection of drum kits for Channel 10. |
| XG | This is a standard used by some Yamaha instruments. It has roughly the same mixer features as GS, but with a different effect and drum kit selection. |
-

- **If your MIDI sound source doesn't support any of these standards, you may still be able to use the MIDI Mixer for basic purposes like setting channel volume values. Refer to your instrument's documentation.**

The Reset Button



Some instruments may have specific GM, GS or XG *Modes* of their own. This button is used to “tell” the instrument to enter the Mode currently set in the Mode pop-up above, and to reset certain parameters to their normal values.

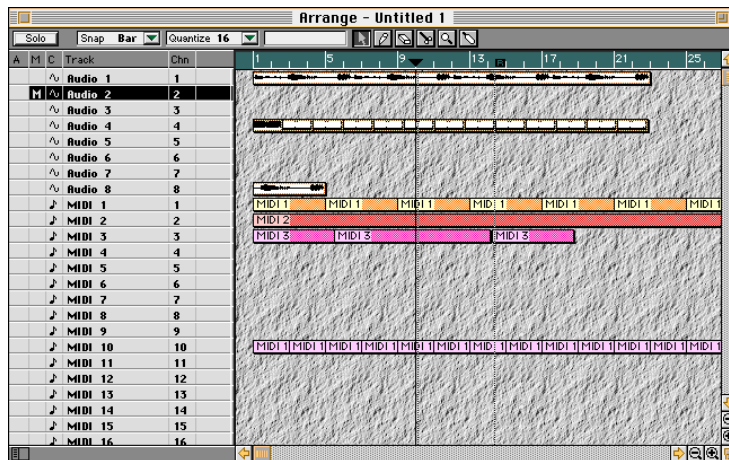
- **Make it a habit to click the Reset button at the start of a recording session, or whenever you change Modes in the MIDI Mixer.**

9

Arrangement Editing

About Parts and Arranging

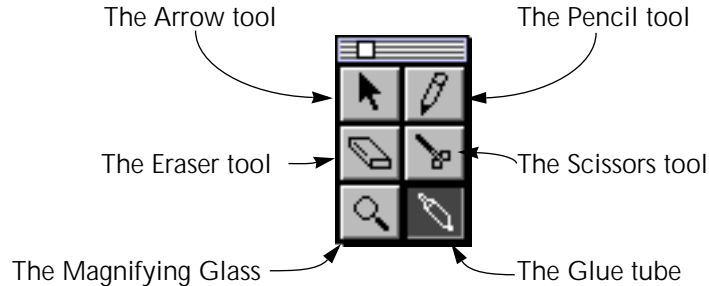
As you have already seen, a Cubasis AV Arrangement is roughly structured in two “levels”: Several *Tracks*, each containing a number of *Parts* . This chapter is about arrangement editing - in other words, re-arranging Parts. This is done in the right part of the Arrange Window, the area called the Part Display.



The Arrange Window with the Part Display on the right side.

About the Tools

When manipulating the Parts, you will make use of the various tools in the Arrange Window's Toolbox.



- **Select tools from the Tools menu, from the Toolbar or directly from a free-floating Toolbox, as described on [page 15](#).**
The pointer takes on the appearance of the selected tool when moved into the Part Display.

The tools are all described later in this chapter, in the contexts in which they are used.

About Overlapping Parts

Parts on the same Track might overlap or be completely on top of one another. However, there is a big difference between the two types of Tracks:

- **On Audio Tracks, only the Parts that you can see are played back.**
This means that if two Parts overlap, the section that is obscured will be silent.
- **On MIDI Tracks, all sections of all Parts will be played back, no matter if they are visible or not.**
You can make good use of this feature in many ways:
 - Parts which start with an upbeat can overlap the end of the previous Part.
 - Small drum ornaments (such as cymbal crashes) can be created as separate Parts and just be put on top of the basic beat Part.
 - Duplicate Parts which are used to create delay effects, double sounds and so on, can be put on top of the original Parts.

Creating Parts

Normally, Parts are created when you record something. However, you may want to create empty MIDI Parts and add notes and other Events in one of the MIDI Editors, for example using Step Recording. There are four ways to create an empty MIDI Part:

- **By double clicking with the Arrow tool in any empty area between the Left and Right Locator, in the Arrange window.**

The new Part winds up between the Locators, on the Track upon which you clicked.

- **By selecting Create Part from the Parts menu.**
- **By pressing [Command]-[P] on the computer keyboard.**

In these two cases, the new (empty) Part winds up on the active Track beginning at the Left Locator and ending at the Right Locator.

- **By drawing it with the Pencil tool.**

In this case, the Track, position and length of the new (empty) Part depends on your drawing and the Snap value (see [page 120](#)).

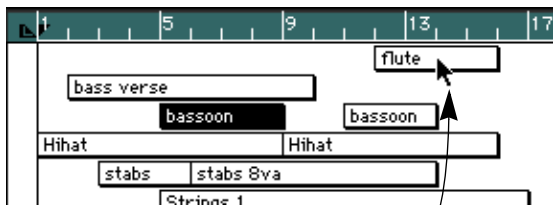
-
- A directly created Part never replaces an existing Part, but might overlap one.
-

The created Part gets the name of the Track, but you can easily change the name, as described on [page 132](#).

Selecting Parts

You have to select a Part in order to move, delete or in any way manipulate it.
Selecting a Part can be done in several different ways:

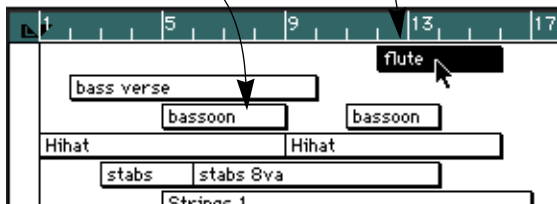
By clicking



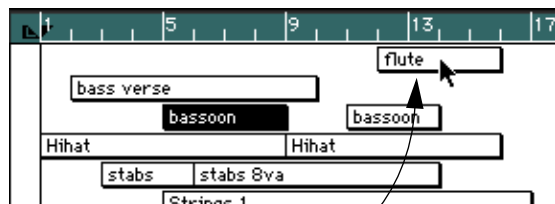
Clicking on a Part with the Arrow tool...

...selects it...

...and deselects all
other selected Parts.



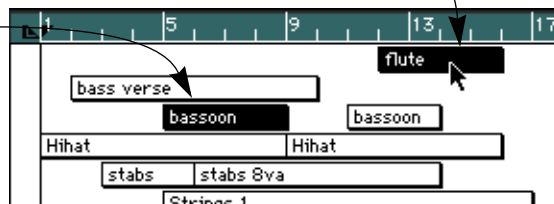
By shift-clicking



Clicking on a Part while
holding down [Shift]...

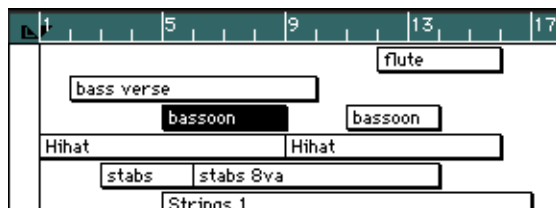
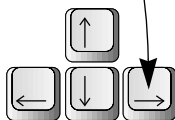
...selects the Part.

The previously
selected Part(s)
remain selected.

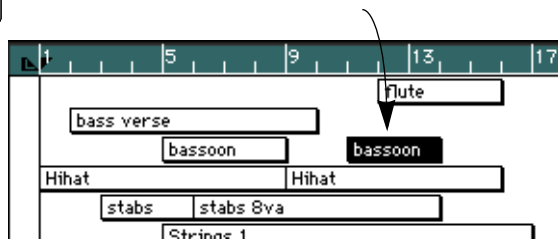


By using the computer keyboard

Pressing the right arrow key on the computer keyboard...

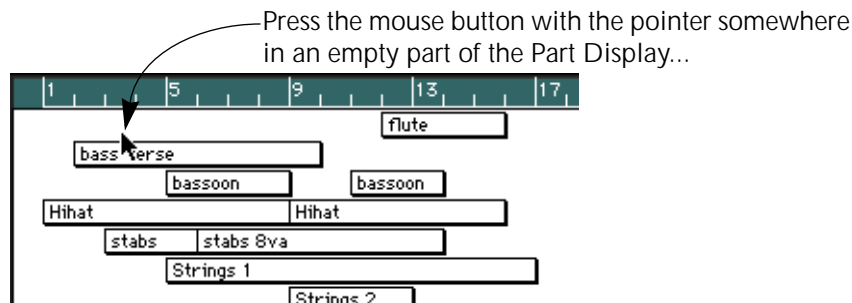


...selects the next Part on the same Track.



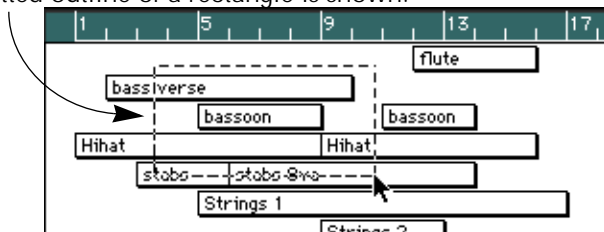
- If you hold down the [Shift] key, the previous Parts will remain selected.

By enclosing them in a rectangle

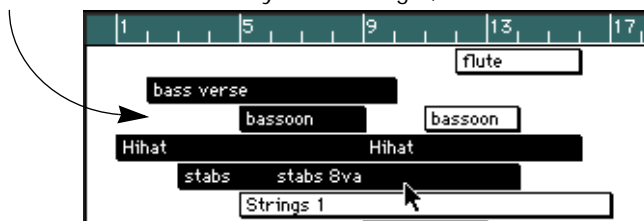


...and drag the mouse with the button pressed.

A dotted outline of a rectangle is shown.



When you release the mouse button, all Parts that were enclosed or "touched" by the rectangle, become selected.



If you hold down [Shift] when you start to drag, you don't have to have the pointer in an empty area, you can start with the pointer positioned over a Part.

Selecting all Parts

On the Edit menu you will find an item called "Select All". This item selects all Parts in the Arrangement.

Edit	Parts	Function
Undo		⌘Z
Cut		⌘H
Copy		⌘C
Paste		⌘V
Delete Parts		
Select All		⌘A
Edit		⌘E

- You can also select all Parts by pressing [Command]-[A] on the computer keyboard.

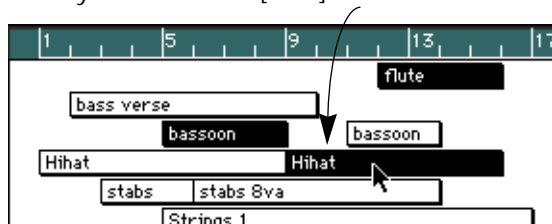
Selecting all Parts on one Track only

If you hold down [Shift] on the computer keyboard and double click on a Part, all Parts on that Track get selected.

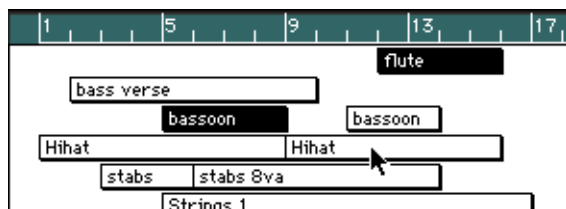
Deselecting Parts

There are two principal ways to deselect already selected Parts:

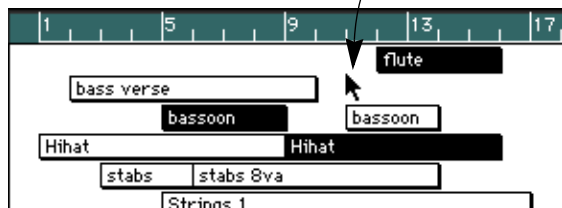
1. If you hold down [Shift] and click on a Part...



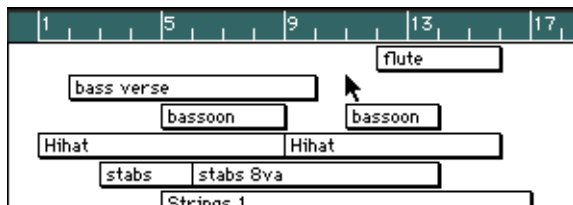
...the Part gets deselected. The other selected Parts remain selected.



2. If you instead click in some empty area in the Part Display...



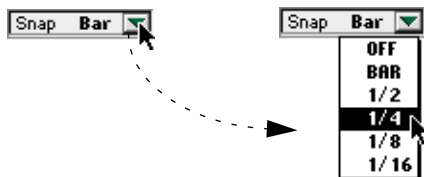
...all selected Parts get deselected.



Manipulating Parts

About the Snap value

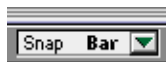
When you are moving, duplicating or changing the length of Parts, the result of your actions depends on the Snap value.



Pulling down the Snap pop-up menu.

This value determines the smallest distance you can move a Part. The table and figure below explains it more clearly:

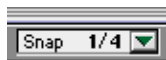
Value	Description
Off	Any position can be used.
Bar	Movement is restricted to exact bar lines.
1/2 to 1/16	Movement is restricted to the selected note value.



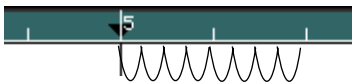
If Snap is set to Bar...



...Parts can only be dragged to exact bar lines.



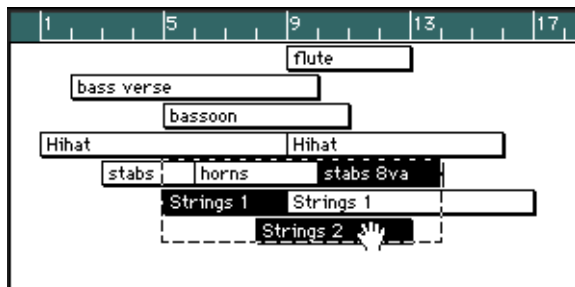
If Snap is set for example to 1/4...



...Parts can be put on any quarter note position.

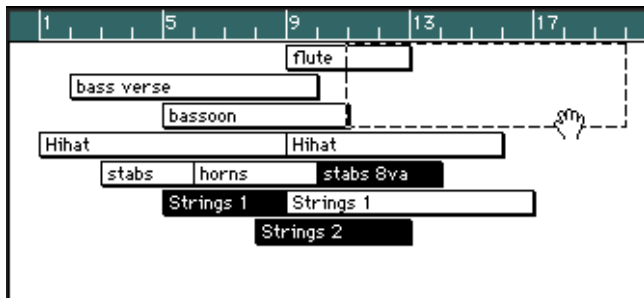
Moving Parts

You can move one or more Parts to a new position on any Track of the same type. Remember that the Snap value determines where you can place the Parts.

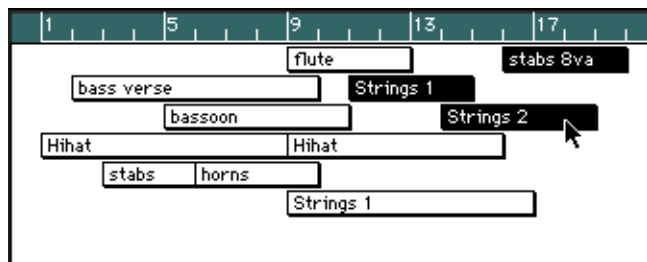


Press the mouse button with the Arrow pointer over the selected Parts you want to move. The pointer takes on the shape of a hand.

Drag the Parts to their new position...

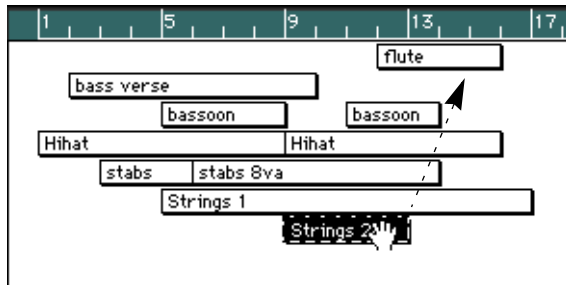


...and release the mouse button. The Parts are moved. Note that the relative distances between the moved Parts are kept intact.



Duplicating Parts

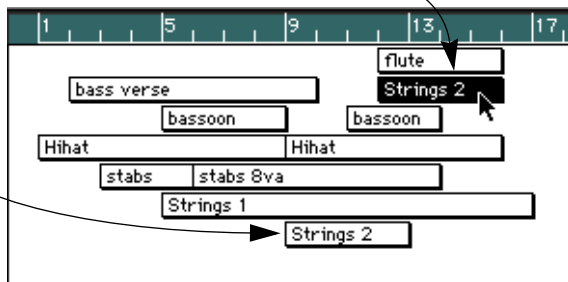
To duplicate Parts, hold down the [Option] key on the computer keyboard and proceed exactly as when moving. You may move the duplicate to any position on any Track of the same type.



When you hold down [Option] and drag a Part to a new position...

...a duplicate of the Part, complete with contents, is placed at the new position.

The original Part is not affected.

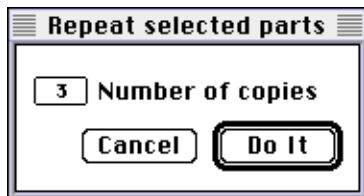


Another way of moving or duplicating Parts is to use Cut/Copy and Paste. These functions are described in the chapter “Basic Methods”.

Repeating Parts

You can repeat one or several Parts, on the same or different Tracks, using the Repeat function on the Parts menu:

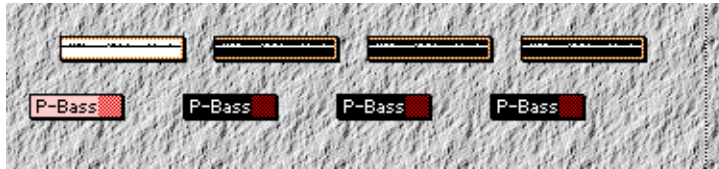
1. Select the Part(s) you want to repeat.
2. Select the “Repeat...” item on the Parts menu...
...or press [Command]-[K] on the computer keyboard.



3. Enter the desired number of copies in the dialog box that appears.

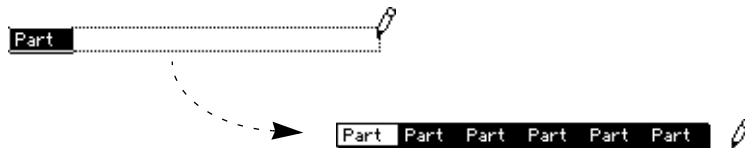
4. Click "Do It".

The selected Part(s) are repeated, and the copies are lined up "end-to-start" after the original(s). The Parts selected are treated as one block, so the relative spacing between the created Parts is determined by the beginning of the first selected Part and the end of the last.



Repeating Parts with the Pencil tool

If you hold down [Option] while lengthening a Part with the Pencil tool, new Parts will be created, all lined up end-to-start after the Previous Part. The new Parts will be copies of the original, including all Events and playback parameters.



The outline shown when you drag the Pencil can be thought of as a "frame", that becomes filled with as many copies of the original Part as possible.

Merging Parts

Merging one Part with another adds the contents of the first Part to the second. Of course, the two Parts have to be of the same type, i.e. both MIDI Parts or both Audio Parts. It is done like this:

1. **Hold down the [Command] and [Option] keys on the computer keyboard.**
 2. **Drag the first Part and release it on top of the other Part.**
As when moving a Part, the result of this depends on the Snap Setting. The start and end points of the two Parts don't have to match at all.
-
- The dragged Part is not erased or even moved. A copy of its contents is made, and it is this copy that is merged into the other Part.
-

Changing the Length of a Part

If you have an excessively long Audio or MIDI Part, you can easily shorten it using the Pencil tool.

-
- For Audio Parts, this will only create a new shorter Segment, without destroying any actual audio data. For MIDI Parts, however, shortening a Part will erase any MIDI data in the section that is removed.
-

1. **Select the Pencil tool.**
 2. **Pull down the Snap pop-up menu and select an appropriate Snap value.**
See [page 120](#).
 3. **Click anywhere in the Part and keep the mouse button pressed.**
A dotted frame appears, indicating the size of the Part.
 4. **Drag the Pencil to the left or right, and release the mouse button.**
The Part is resized. You may use this method to make the Part longer as well, but this is not very useful, since there will be nothing in the lengthened section!
-
- If you make a MIDI Part shorter with the Pencil tool, some notes may continue to sound after the end of the Part. To make these notes end when the Part ends, select the Part, pull down the Parts menu and select Cut Notes.
-

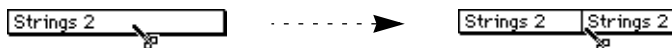
Splitting a Part

To split a Part into two, you use the Scissors tool:

1. **Select the Scissors tool.**
2. **Pull down the Snap pop-up menu and select an appropriate Snap value.**
See [page 120](#).

3. **Click in the Part where you want to split it.**

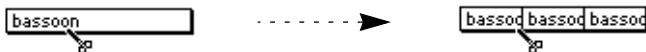
You will get two Parts, with the same name as the original Part.



Clicking with the Scissors on a Part, divides it in two.

- **If you hold down [Option] and click on a Part with the Scissors tool, the Part is split into several sections.**

The length of the sections is determined by where you click in the Part:



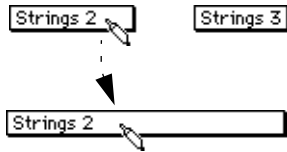
Joining Parts

You can use the Glue Tube tool to join Parts together into one:

1. Select the Glue Tube tool.

2. Click on a Part.

The Part is “glued together” with the next Part on the Track. The resulting, longer Part will have the name of the first Part. It is OK if there is a gap between the two Parts.



Before and after glueing two Parts together.

- **If you hold down [Option] and use the Glue Tube tool, the Part you click on, and all following Parts on the Track, will be joined into one larger Part.**

The resulting Part will have the name of the Part you click on.

Scrubbing

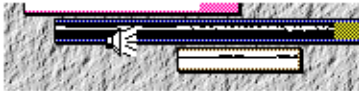
With the Magnifying Glass tool, you can perform what is known as “Scrubbing”. This means that you can listen to the contents of each Part separately in Stop mode:

1. Select the Magnifying Glass.

From there on, the procedure differs for Audio Parts and MIDI Parts:

2. To monitor the contents of an Audio Part, click anywhere in the Part.

You will hear the contents of the Part played back, from the point where you clicked, for as long as you keep the mouse button pressed (or until the end of the Part).



When you press the mouse button, the pointer takes on the shape of a speaker.

3. To monitor the contents of a MIDI Part, drag the pointer forwards or backwards over the Part.

Notes and other MIDI Events will be played back according to how fast you drag the pointer.

Renaming Parts

A Part can have a name consisting of up to 10 characters. When you create a Part by recording, it will get the name of the Track it resides on. There are two ways to change the name of a Part:

- **Select the Part, open the Inspector and double click on the name field.**
Type in a new name and press [Return].
- **If it's a MIDI part, you can also double-click on the Part.**
A small name value box opens, where you can type in a new name. For MIDI Parts, the name is shown inside the actual box in the Part display.

Deleting Parts

There are several ways to delete a Part:

- **Click on it with the Eraser tool.**
- **Select it and press [Backspace] on the computer keyboard.**
- **Select it, pull down the Edit menu and select "Delete Parts".**

A note on deleting Audio Parts

Deleting an Audio Part with any of the above mentioned methods does not remove the actual audio file from the hard disk, or even from the list in the Pool. To actually delete the audio file from the hard disk, proceed as follows:

- 1. Select the Part.**

If the audio file is used in several Parts in the Arrangement, you need to select all these Parts.

- 2. Hold down [Command] on the computer keyboard and press [Backspace].**

A dialog appears, asking if you really want to delete the Audio file.

- 3. Click "Yes".**

The Audio file is removed from your hard disk.

-
- Keep in mind that a single audio file may be used by several Cubasis AV Songs! Make absolutely sure the audio file isn't used in any other Song, before you delete it.
-

Working with several Arrangements

You can work with more than one Arrangement within a Song, if you like. The different Arrangements could for example contain different versions of your music, or be used as “workbenches” for pieces that you later put together into one final Arrangement, etc.

Opening a New Arrangement

There are two ways to open a new Arrangement:

- Pull down the File menu and select “New”.

or

- Press [Command]-[N] on the computer keyboard.

The new, empty Arrangement opens in a window of its own.

Selecting an Arrangement

Clicking on the Arrange button on the Transport Bar brings the most recently active Arrange window to front. To select another Arrangement, click on its window, or if it is obscured, pull down the Windows menu and select it from the Arrangement list.



Copying Parts between Arrangements

If you want to move or copy Parts from one Arrangement to another, you use the standard Macintosh Cut, Copy and Paste commands on the Edit menu. This example describes how to copy a group of Audio and MIDI Parts to a new, empty Arrangement:

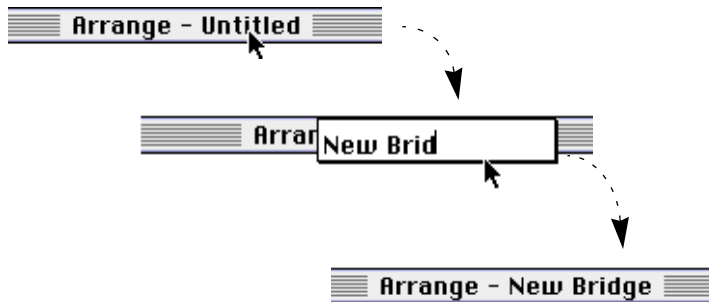
- 1. Select the Parts to be copied.**
- 2. Pull down the Edit menu and select Copy, or press [Command]-[C] on the computer keyboard.**
If you want to move the Parts instead of copying, you should use the Cut command ([Command]-[X]) instead.
- 3. Click on the other Arrange window, so that it comes to front.**
- 4. Move the Song Position pointer to where you want the first of the copied Parts to begin.**
All other Parts will keep their distances in relation to the first Part.
- 5. Pull down the Edit menu and select Paste, or press [Command]-[V].**
The Copied/Cut Parts are pasted into the new Arrangement, on their original Tracks, starting at the Song Position.

Making a copy of a complete Arrangement

Sometimes you may want to make a duplicate of your whole Arrangement, for example if you want to have several versions to experiment with. Then, the easiest way is simply to save the Arrangement (using the “Save As...” item on the File menu) and open it again in new Arrange windows, as many times as you want. Refer to the [page 330](#) for more information about these commands.

Naming the Arrangement

You can give names to each of your Arrangements simply by double clicking on the Arrangement name in the Title bar, and typing in a new name.



Renaming an Arrangement.

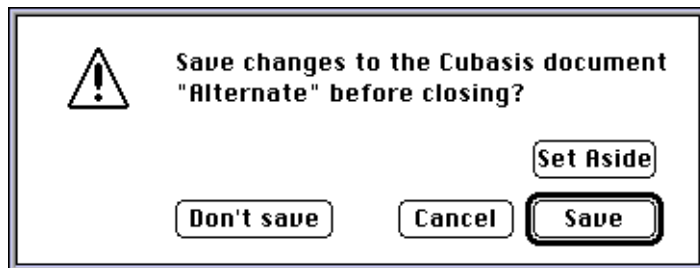
If you choose to save an Arrangement to disk as a separate file, then the name you give it while saving will be used as the Arrangement’s title next time you load it.

Closing an Arrangement

You can close an Arrangement, if you don't want to keep it or if you just want it to get out of the way:

1. Make sure the window is active (selected).
2. Click on the window's Close Box, select "Close" from the File menu or press [Command]-[W].

A dialog appears:



3. Select one of the options in the dialog.

The four options have the following functions:

Don't Save	Closes the Arrangement without saving it.
Save	Opens a file dialog where you can save the Arrangement for later use. After saving, the Arrangement is closed.
Cancel	Cancels the operation, i.e. the Arrangement is not closed.
Set Aside	The window is closed, but the Arrangement is kept ,“hidden” in the Song. To open a set aside Arrangement, pull down the Windows menu and select it from the Arrangement list there.

10

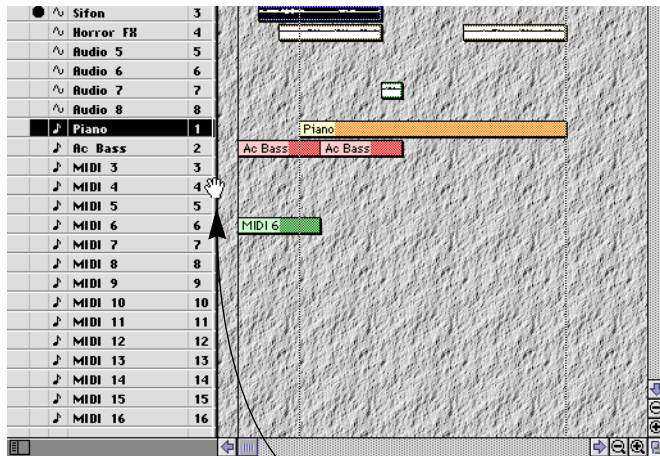
The Track Columns and the Inspector

The Track Columns

The Track columns show names and settings for the Tracks. Some of these settings can be changed directly.

Getting the Track Columns to appear

The Arrange Window is divided into two parts, the Track columns to the left and the Part display to the right. To get all of the Track columns to appear, press the mouse button with the pointer positioned above the Divider (the border between the two parts of the Arrange Window) and drag it as far to the right as possible. You should now be able to see all of the Track columns.



The Divider, dragged as far right as possible.

Changing the order of the Track Columns

You can arrange the vertical columns in any order you like, by simply dragging the headings to the left and right, respectively.

If you drag to the left, the column will be inserted to the left of the column you "drop it on". If you drag to the right it will be inserted to the right of the column you "drop it on".

The Activity Column

This has the heading "A". It shows if any audio or MIDI (depending on the Track type) is being sent out from the Track at the Moment. The width of each bar represents audio volume/MIDI note velocity.

A	M	C	Track
			Vocales
			Piano
			Bc Bass
			MIDI 3

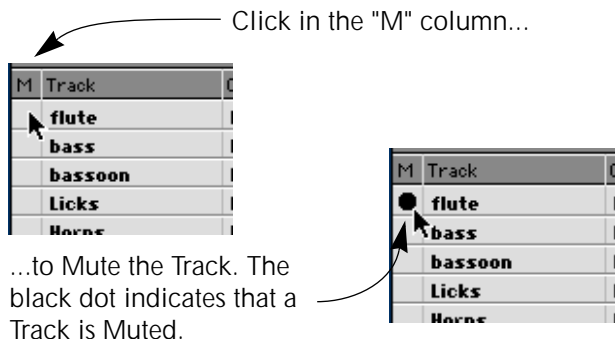
-
- This column cannot be moved.
-

The Class Column

This column (labelled “C”) helps you keep track of which Track Class each Track belongs to (Audio or MIDI Track). You cannot change this value.

The Mute Column

The Mute column is indicated by an “M”. By clicking in this column, you temporarily “silence” the Track. A black dot is displayed in the column. To make the Track sound again, you just click in the Mute column again. This is described in detail in [the chapter “Mute and Solo”](#).



The Track Column

This column shows the Track's name. To enter or change a name, double click in this field for the relevant Track.

The Chn Column

The Chn column shows the Audio/MIDI Channel for each Track. This value shows you which Track goes to which channel in the Audio/MIDI Mixers. You cannot change this value.

Using the Inspector

What is the Inspector?

The Inspector is a part of the Arrange Window. It contains a number of value- and name fields where you can change settings and properties of a Track, or individual Parts on a Track.

- **Audio and MIDI Parts have altogether different Inspector settings.**
For Audio Tracks, the Inspector is also used to set up the Tracks for recording, as described on [page 35](#).

There is one important thing to remember before you start working with the Inspector:

-
- The settings you make in the Inspector will only affect the material *during playback*. You don't actually change the recorded data itself.
-

When you play back notes
from a Part...



...they pass through
the Inspector...



...and are output, in this
example transposed one fifth
(i.e. seven semitones) upward.

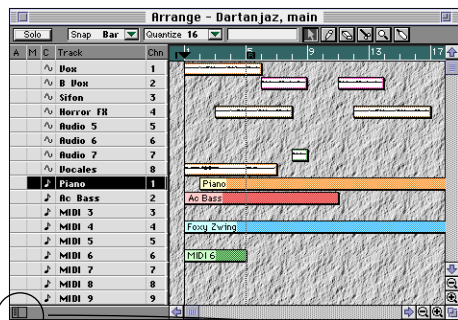


The actual recorded material
in the Part is not affected.



Getting the Inspector to appear

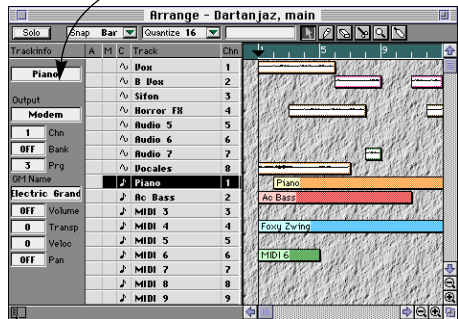
You open the Inspector by clicking on the strip with the little Inspector Icon below the Track column, or by pressing [Option]-[I]. An area to the left of the leftmost column in the Track list appears. In this you find a number of value fields, name fields and buttons. These are described on the following pages.



Click on the Inspector Icon...



...to open the Inspector.



To close the Inspector, click on the Inspector Icon again.

Changing values in the Inspector

By changing values in the Inspector, you make changes to your Parts and Tracks. For MIDI Parts and Tracks, some fields are duplicates of settings in the MIDI Mixer, while others can be found only in the Inspector. To get a basic concept of how to use the Inspector, follow the steps below:

- 1. Open the Inspector.**
- 2. Select a MIDI Track on which you have recorded some music.**
This example describes how to use the Inspector with a MIDI Track; the procedures for Audio Tracks are similar.
- 3. Check that no Parts are selected.**
The heading of the Inspector should read "Trackinfo" - otherwise, just click on an empty area in the Part Display.
- 4. Start playback.**
- 5. While the music is playing, try changing the "Transpose" and "Volume" values in the Inspector.**
The transposition and volume of the played back music will change accordingly.

Making Real-time changes with the Inspector

When you change the value of a parameter in the Inspector, the new value is immediately sent out to the MIDI Output. This will affect not only the sound source assigned to the selected Track, but all MIDI devices connected to the same Output as the Track, and set to receive on the same MIDI Channel.

You may use this feature for setting appropriate values (e.g. volume, velocity etc.) while the music is playing.

What is affected by the Inspector?

This depends on what is selected in the Arrange window. The following possibilities exist:

When a Track, but not a Part, is selected:

When no Parts are selected, the Inspector has the heading “Trackinfo”. The parameter values affect the selected Track, and all the recorded material (the Parts) on it.



The Inspector opened for the Track "Piano".

-
- For Audio Tracks, you cannot change the settings for a complete Track, only for individual Parts.
-

When One MIDI or Audio Part is selected:

The Inspector has the heading "Partinfo". The parameter values affect the selected Part only.



← The Inspector opened for the Part "Pi Solo".

When Two or more MIDI Parts are selected

The Inspector has the heading "Partinfo", and shows the parameter values of one of the selected Parts. If you change a parameter, a dialog box will appear, asking if you want to apply the changed value to all selected Parts.

When Two or more Audio Parts are selected

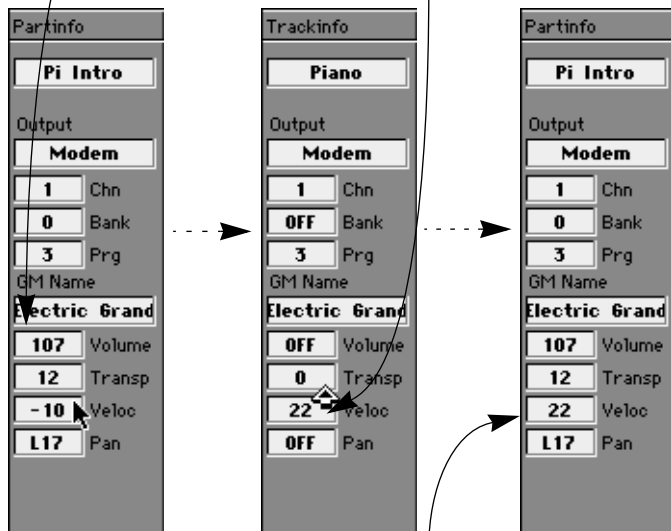
The Inspector will have the heading "Partinfo", and you will be able to make settings as usual, but any changes you make in the Inspector will only affect the first of the selected Parts. In effect, you can only make settings for one Audio Part at a time.

How MIDI Part and Track settings relate

As you have seen, you may change parameter values both for the whole MIDI Track and for individual Parts on the Track. It is the latest change that “counts”. If for example you change the velocity value of a single Part and then set another velocity value for the whole Track, the Part will also get this latest velocity value. Other parameter settings for the Part will remain unaffected.

Make various settings for a Part...

...then change the velocity value
for the whole Track.



Now the velocity value for the Part is
changed to that of the Track, but the other
settings for the Part remain unaffected.

- This applies to MIDI Parts and Tracks only, not to Audio Parts. You can only make Inspector playback settings for one Audio Part at a time.

The Fields and Values in the Inspector

The Inspector contains names, numerical values and pop-up menus. All these settings can be changed using any combination of mouse and keyboard, as usual. Like all other changes, these can of course be done while the music is playing and even while recording.

Audio Parts

Parameter	Explanation
Track/Part Name	The name of the selected Track/Part.
Record Info	If you double click on this box, a dialog will appear, where you can change the folder in which created audio files are stored.
Mono/Stereo	Use this button to determine whether the Audio Track should be in Mono or Stereo before you start recording, as described on page 35 . Once you have recorded, imported or dragged any audio onto the Track, you cannot change this setting.
Volume	A volume value for the Part (0 - 127). If this is set to "OFF", the Part will play back at full volume.

Parameter	Explanation
Fade In	<p>The Fade In time. The higher value, the longer time it will take for the sound to reach its full volume, starting from the beginning of the Part.</p> <p>If you want the Audio Part to play back normally from the start, without Fade In, set this parameter to "OFF".</p>
Fade Out	<p>The Fade Out time. If you set this to any other value than "OFF", the volume will decrease at the end of the Part , causing the sound to fade away. The higher value, the earlier in the Part the fade out will begin.</p>

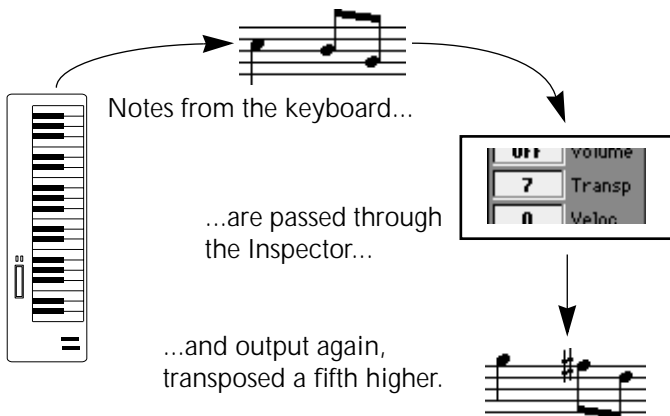
MIDI Parts/Tracks

Parameter	Explanation
Track/Part Name	The name of the selected Track or Part.
Output	<p>The serial port (Modem or Printer) used for MIDI Output. You cannot change the value in this field (it serves as a reminder only). To switch Output port globally, you have to use the MIDI Interface dialog, reached from the Options menu.</p>
Chn	The MIDI Channel associated with the Track. You cannot change this value.

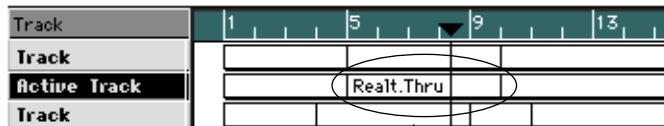
Parameter	Explanation
Bank	Lets you associate a MIDI Bank Select message with a Track or a Part, to make a connected instrument switch "program bank".
Prg	Lets you associate a MIDI Program Change message with a Track or a Part, to make a connected instrument switch from one sound to another.
GM Name	The General MIDI instrument name associated with the Program Change number in the Prg field above. Click in this field to open a pop-up menu, where you can select a GM instrument without having to use Program Change numbers.
Volume	A volume value for a Track or a Part. This setting is sent out as a MIDI Volume message.
Transp	Lets you transpose the notes in a Part or a Track.
Veloc	The value in this field is added to the velocity of the notes played back.
Pan	Sends out a MIDI message, telling your instrument to place the sound of the Part/Track in a certain position in the stereo field.

Real-time Thru

In most MIDI recording situations, the Thru function in Cubasis AV is used to “echo” incoming MIDI data via MIDI Out. If you use the Thru function, the MIDI data that Cubasis AV receives via MIDI In is modified in real-time by some of the Playback parameters. This means that if you for instance set a transposition value of 7 (semitones) and play your keyboard, all notes coming out via the MIDI Out are transposed a perfect fifth higher.



This allows you to try out what effect a certain parameter setting will have on the music, before and when you record something. Since different Parts can have different settings you must select the right Track and check that the Song Position is somewhere within the Part that has the settings you want to try.



The settings for the Part in the "cross" made up by the Active Track and the Song Position is used for real-time "Thruing".

- It doesn't matter which Part or Track you have visible in Part Info (you may have stepped through the Parts and Tracks with the arrow keys on the computer keyboard), it is only the Song Position and Active Track which determines which Part's settings should be used for the real-time modification.

The real-time parameters used for modification are Transpose and Velocity.

11

Quantizing and Using Functions

How Functions are applied

-
- The procedures in this chapter are relevant for MIDI Tracks only.
-

By using the items on the Functions menu you can perform various operations on notes and other MIDI data. The most important of these functions is called Quantization, and will be explained in detail in this chapter. However, before explaining how the functions work, it is important to know exactly what is affected by a function:

- **Functions will apply to *all selected Parts*.**

If there are no selected Parts, the function will apply to *all Parts* on the *active Track*.

Quantizing

What is Quantizing?

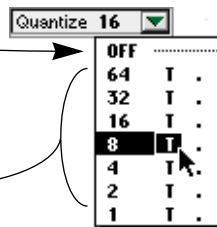
Quantizing is a function that automatically moves recorded notes, positioning them on exact note values. If you record a series of eighth notes, for example, some of them may end up slightly “off” the exact eighth note positions. Quantizing the notes with the Quantize value set to eighth notes, will move the “misplaced” notes to exact positions.

The Quantize value concept may need some explanation. By setting this value, on the pop-up menu on the Status Bar, you select the exact positions the notes should be moved to when you quantize. These are the options:

If you select OFF, no quantizing will be done.

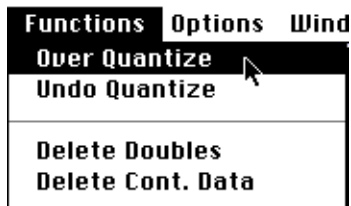
This column is for selecting the basic Quantize note value. As you see, the available values range from 1 (whole note) to 64 (1/64 note).

If you drag the pointer to the right, you can add a “T” or a “.” option to the note value. This will result in a triplet (T) or dotted (.) Quantize value.



In this example a Quantize value of eighth note triplets is selected.

Selecting Over Quantize



In Cubasis AV, the Quantize function is called “Over Quantize”. This is a very musical version of the standard “auto correct” quantize, that will move notes to the closest quantize value, without changing the length of the notes.

To Quantize your music, proceed as follows:

- 1. Select the Part(s) that you want to Quantize.**
If you have no Parts selected, all Parts on the selected Track will be affected.
- 2. Pull down the Functions menu and select Over Quantize or press [Q] on the computer keyboard.**
The notes in the selected Part(s) are quantized according to the selected Quantize Value.

-
- Quantizing can also be performed from within a MIDI Editor, allowing you to quantize any selection of notes and other Events. How to select which Events are to be quantized is described on [page 223](#).
-

Undoing Quantize

-
- Quantizing in Cubasis AV is not done “once and forever”! You can always re-quantize to any value, even to Off, and even after saving to disk.
-

This means that notes quantized to eighths can later be quantized to sixteenths. The original (un-quantized) positions of the notes are used for determining how notes should be moved.

To completely restore quantized notes to their original positions, use the Undo Quantize function on the Functions menu. This can be applied to any selection of Parts, just as all Functions (see [page 161](#)).

Other Functions

The Functions menu is not only used for quantizing, it contains a couple of other functions as well. The same rules as for Quantizing are used to decide what gets affected.

Delete Doubles

This command erases all double notes, which may occur when you record with Cycle activated. Double notes could be hard to hear, but sometimes they sound like short delays or flanger effects (or even just as one extra loud note).

Notes are considered to be doubled when they have the same note number (pitch) and have identical start points.

Delete Cont. Data

This command erases all continuous data such as Modulation, Pitch Bend, etc. Notes and Program Change Events are left unaffected.

12

The Audio Pool

Introduction

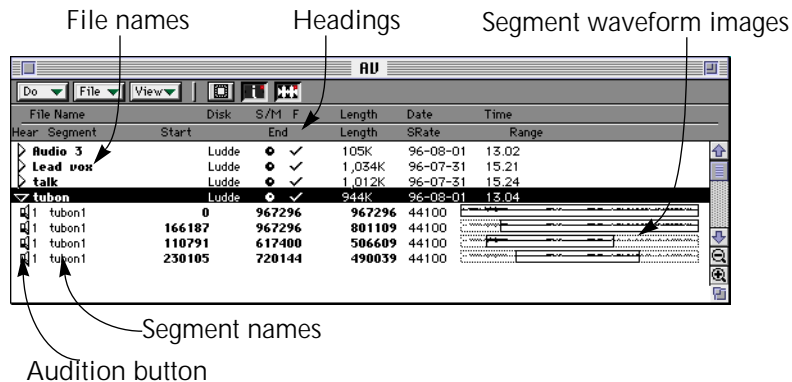
Just as you use the Finder to manage your files and folders, you use the Pool to manage your audio segments and files.

Opening the Pool Window

The Pool is opened by clicking the “Pool” button on the Transport bar.



Overview of the Window



The Pool lists all the audio files in the Song. Please note that this means it shows the files for *all* Arrangements that belong to the Song.

About Files and Segments

Files

Each time you record audio, an audio file is created on your hard disk. Each file currently used in the Song is shown in bold text in the Pool.

Segments

You don't need to use the whole file in your arrangement. You might instead want to specify that only a portion of the file is to be used. To do this you specify a Segment of the file.

When you record audio, a Segment with the full length of the audio file is automatically created, and it is this that is played back from the Arrangement.

Later in this chapter you will learn more about creating your own Segments, which play any part of the file.

Customizing the Display

Showing and Hiding Segments

For one File

- To display/hide the segments belonging to one file, click on the triangle preceding the file.

For all Files

- To Show all segments for all files, select Expand from the pop-up View menu.
- To Hide all segments for all files, select Collapse from the same menu.
- To toggle between showing and hiding all segments for all files, hold down [Option] and click on one of the triangles preceding the files.

Hiding Headings

If you don't need the Headings at the top of the window you can hide them using the "Hide/Show Headings" item on the pop-up View menu.

Selecting what is shown

If you don't need all the information fields for the files and segments, you can deactivate these by clicking the “i” icon at the top of the window. Among other things this allows you to get a more detailed overview of the waveforms.

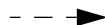
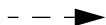
Zooming and setting Sizes of the Waveforms

If you change the width of the window, the waveforms are scaled accordingly. That is, the bigger you make the window the more detailed view of the waveform you will have.

By clicking the Magnification Glasses you can set the vertical size of the lines, to get a better overview of the waveforms.

Selecting Time Formats

You can set unit of measure for the Start, End and Length values, by clicking the Time Format button at the top of the window. Each time you click, the symbol in the button changes, and a new format is selected.



Sample format

Time code format (“frames”)

Meter position format

The Time format button indicates which format is currently selected.

- **If you select samples, the values are shown as numbers of samples.**
Since Cubasis AV uses 44.1 kHz sample rate, there are 44100 samples per second.
 - **If you select time code format, the values are shown in the format “hours:minutes:seconds:frames”.**
 - **If you select meter position format, the start and end inset values indicate the start and end position of the *first instance* of the segment in the Song, as bars, beats and ticks.**
If the segment is not used, the start inset will show 1.1.0 and the end inset will show the end position as it would be if the segment had really started on 1.1.0.
The length value shows the length of the segment in bars, beats and ticks, starting with 0.0.0 - in other words the difference between the end inset value and the start inset value.
-
- Please remember that if you have meter position format selected, the End Inset and Length values are tempo dependent. That is, if you change the tempo, these values will change as well.
-

Setting File and Segment Order

File Order

On the View menu, you can determine in which order the files should be displayed:

Option	Description
By Name	Files are shown alphabetically.
By Date	Files are shown ordered according to the time they were created, with the newest file on top.
By Size	Files are shown in size order, with the largest one on top.

Segment Order

By selecting “Order Segments” from the pop-up View menu, you rearrange the segments so that they are shown in the order they appear in the file.

The Headings and Columns

For each file/segment you have a number of information and setting fields. The names for these are displayed in two rows of headings at the top of the window.

File Name	Disk	S/M	F	Length	Date	Time
Hear Segment	Start	End	Length	SRate	Range	
▼ Gong Morph	Macint...	●	✓	540K	93-10-02	16.40
🔊 Gong Mo2	n	292747	292747	44100		

The file headings and their corresponding fields in the Pool window.

File Name	Disk	S/M	F	Length	Date	Time
Hear Segment	Start	End	Length	SRate	Range	
▼ Gong Morph	Macint...	●	✓	540K	93-10-02	16.40
🔊 Gong Mo2	0	292747	292747	44100		

The segment headings and their corresponding fields.

Below follows a brief description of each entry in the headers. Many of these are used in various operations described later in this chapter.

File Heading	Explanation
---------------------	--------------------

File Name	The name of the file, on disk.
-----------	--------------------------------

Disk	The Disk the file resides on.
------	-------------------------------

S/M	Indicates if the file is mono (one bullet) or stereo (two bullets).
-----	---

F	A tick mark indicates the file has been found, a crossed circle shows that it has not been found (see below).
---	---

Length	This shows the size of the file in kilobytes.
--------	---

Date and Time	This shows the date and time the file was created.
---------------	--

Segment Heading**Explanation**

Hear	To play the segment, click in this column (on the speaker symbol) and hold down the mouse button.
Segment (name)	The name of the segment.
Start	The segment's Start Inset in the file. Displayed in samples, as a meter position, or as time code, depending on the selected format (as described on page 171 in this chapter). This can be changed, see below.
End	The segment's End Inset in the file. Can be changed.
Length	The length of the segment. Can not be changed.
SRate	The Sample Rate of the file.
Range	An overview of the segment in the file. You can use this to graphically fine-tune the start and end points of the segment.

Finding Out how a Segment is used in the Song

One segment can be used in more than one place in a Song. There are a number of situations where you will want to find out where a segment is used, for example:

- So that you can tell that a segment isn't used anywhere and possibly delete it.
- If you want to know if a segment is used in more than one place, so that you can decide how editing the segment affects the Song.

Number of Times the Segment is used

Next to the speaker icon for each segment, you will see a number telling how many times in the Song this segment is used. A segment without numbers is not used anywhere.

File Operations

Renaming a File

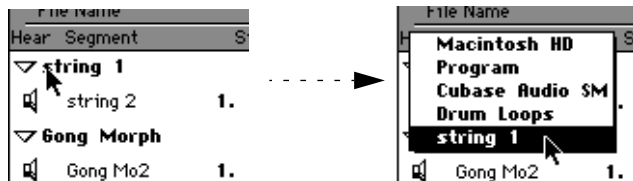
To rename a file, proceed as follows:

1. **Double click on the existing name.**
2. **Enter a new name or edit the existing one.**
3. **Click outside the box or press [Return].**

-
- Renaming a file this way is much preferred to renaming it from the Finder. This way, Cubasis AV “knows” about the change and will not lose track of the file the next time you open the Song. See [page 181](#) for details about lost files.
-

Locating a File on the Hard Disk

To find out where on the hard disk a certain file is located, hold down [Command] and [Option] and click on the file. A pop-up showing you the file location appears.



Deleting Files

Removing from Pool

If you want to remove one or more files from the Pool without actually deleting them from the hard disk, proceed as follows:

1. Select the file(s).

Selecting more than one is done just as with any other object in Cubasis AV, by clicking in combination with the [Shift] key.

2. Press [Backspace].

- **If you try to delete a file that is used by one or more Parts, the program will ask you if you also want to delete those Parts.**
Cancelling this operation means that neither the file nor the Parts are deleted.

Removing from the Pool and deleting from Hard Disk

If you want to remove the file from the Pool and also delete the file permanently from the hard disk, proceed as follows:

1. **Select the files.**
2. **Hold down [Command] and press [Backspace].**
A dialog box asks you if you are sure you want to continue. Remember that this operation cannot be undone!

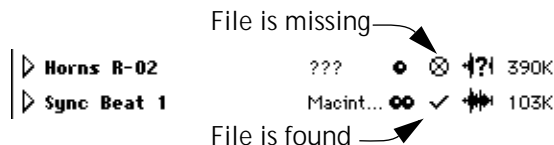
Creating a Segment

You can create a “default” segment for the file, that is one that plays the entire file.

1. **Select the file.**
2. **Select Duplicate Segment from the Do pop-up menu or press [Option]-[D].**
The new segment can be edited to play any part of the file (see [page 187](#)).

Handling “Missing Files”

When you open a Song, you may get a warning that one or more files are “missing”. If you click Ignore, the Song will open anyway, without the missing files. In the Pool you can check which files are considered missing. This is indicated by a crossed circle next to the file (instead of the usual checkmark).



A file is considered missing under one of the following conditions:

- The file has been moved to another folder or renamed in the Finder since the last time you changed the Song
and
you ignored the Missing files dialog when you opened the Song.
- You have used the Finder to move, rename or change properties such as date for the file since you started the program this time.

Locating a missing file

1. Click on the crossed Circle.
2. In the dialog that appears, decide if you want the program to try the find the file for you (Auto) or if you want to do it yourself (Manual).

Auto

If you choose Auto, the program scans all your hard disks for a file with the proper name and creation date.

If Auto doesn't work

Please note that Cubasis AV is quite strict about identifying the files you use. Cubasis AV retains information on the Name and Creation Date of every file saved in a Song. If these values are changed by you, or a program you may be using, you will not be able to rely on Cubasis AV's "auto-find" function. In this case you will have to use the "Manual" option and "over-ride" the subsequent warnings.

Manual

If you choose Manual, the program will display a file dialog allowing you to locate the file manually.

When you have found the file, click OK to replace the missing file in the Pool. If the name or date is not identical to the missing one, the program will warn you but let you proceed. The next time during this session that the program attempts to search for a missing file, it will first look at the position of the last found file.

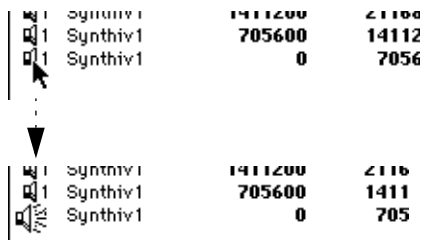
Segment Operations

The Pool allows you to create new segments, slightly or drastically different from those you already have in your Song, and drag and drop these in the Arrange window.

Auditioning a Segment

From the Beginning

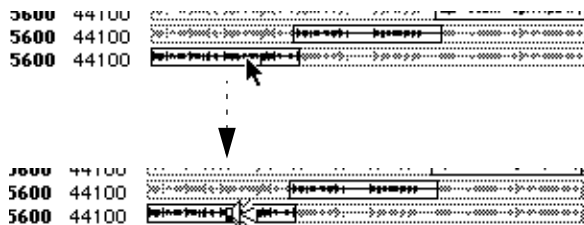
To audition a segment from its beginning, press and hold the mouse button with the pointer over the speaker icon to the left of the segment name.



When you press and hold the mouse button, the pointer turns into a loudspeaker symbol.

From any Position

To start playback from any position in the segment, click with the mouse pointer in the waveform to the right. Playback will start from the position you click on.



When you press the mouse button, the pointer turns into a loudspeaker symbol.

Renaming a Segment

To rename a segment, proceed as follows:

1. Double click on the existing name.
2. Enter a new name or edit the existing one.
3. Click outside the box or press [Return].

Duplicating Segments

To create a copy of a segment, proceed as follows:

1. **Select the segment by clicking on it.**
2. **Select Duplicate Segment from the Do pop-up menu or press [Option]-[D].**
The new segment appears in the Pool.

Deleting segments

-
- Deleting a segment never destroys any actual audio data.
-

Deleting one or several segments from the Pool

1. **Select the segment(s).**
Selecting more than one segment is done just as with any other object in Cubasis AV, by clicking in combination with the [Shift] key.
2. **Press [Backspace].**
 - **If you try to delete a segment that is used by one or more Parts, the program will ask you if you also want to delete those Parts.**
Cancelling this operation means that neither the segments nor the Parts are deleted.

You can tell how many times a segment is used in a Song by checking the number next to the speaker icon.

Deleting all Segments not used in the Song (Purge)

To automatically delete all segments that are currently not used in the Song, select Purge Segments from the Do pop-up menu. This is a quick way to “clean up” the Pool, making it easier to get a good overview.

Changing Start and End Insets

You can change the Start and End points of the segment. This allows you to change what part of the audio file the segment plays. One use for this is to remove unwanted silence at the beginning or end of a recording.

-
- Please note that this change will affect all places in the song where this segment is used. If this is not what you want, make a duplicate of the segment first, and make the changes to this. Then drag the changed segment into the Arrange window and place it wherever you want it.
-

Changing the Start and End Inset can be done in two ways.

By Numerical Editing

When the insets are shown in the Sample format (see [page 171](#)), you can adjust the Start and End Inset values by regular value editing. The waveform to the right will adjust to show your changes.

By Dragging

You can also drag the Start and End Inset directly in the waveform.

1. Position the pointer over the beginning or end of the segment.

If the segment currently plays the entire file, these two points are at the beginning and end of the waveform image.

2. Press the mouse button and drag left or right.

When you edit the segment graphically this way, it may be a good idea to turn off the Information, by clicking the “I” button, and zoom in on the waveforms by clicking on the “+” Magnifying glass. That way, you will get a larger waveform display.

Moving the Segment

To move the segment within the file, without changing its length, proceed as follows:

1. **Hold down [Command].**
2. **Position the pointer over the segment and drag left or right.**
A dotted outline of the segment is shown while you are dragging.



Importing Audio Files into the Pool

From the Pool you can import files created by other programs, or files you have created in another Cubasis AV Song.

File Formats

Files in the following formats can be imported:

- Sound Designer II or Audio IFF (AIFF).
- Mono or Stereo.
- 44.1 kHz sample rate.

A regular Macintosh file dialog is used to select audio files to import.

After you have opened the first file, the dialog appears again allowing you to import more files. When you are done and don't wish to import any more files, click Cancel.

Exporting Files and Segments

You can export segments from the Pool as individual files, for use in other applications:

1. **Select the segment you wish to export.**
2. **Select “Export Segments” from the Do pop-up menu.**
A file dialog appears.
3. **Use the file dialog to find a location and name for the file.**
4. **Click Save.**

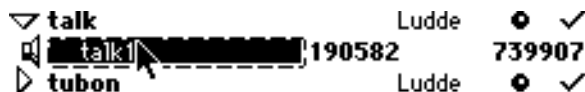
File Formats

Files you export from Cubasis AV are in AIFF format with 16 bit resolution and 44.1 kHz sample rate.

Dragging Segments into the Arrange Window

To move segments into the Arrangement, Cubasis AV uses drag and drop techniques:

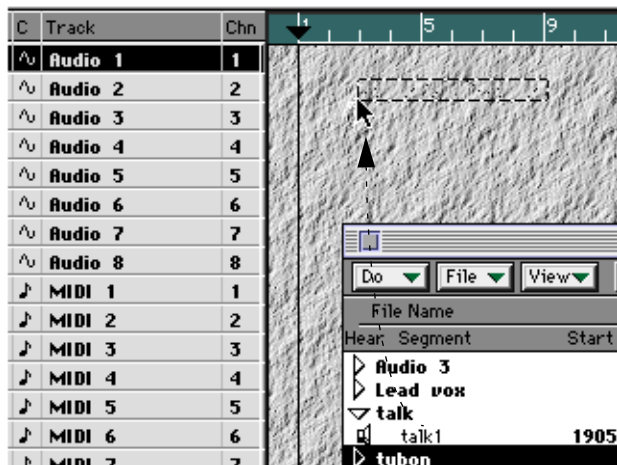
1. Arrange the windows so that as much as possible of the Part Display in the Arrange window is visible, when you have the Pool window active.
2. Position the mouse button over the name of the segment and press the mouse button.



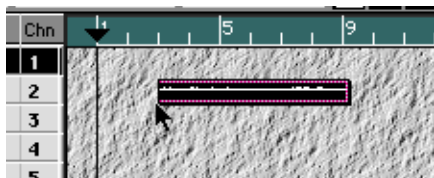
A dotted rectangle appears around the name of the segment.

3. Drag the segment out of the Pool window and release it on an Audio Track in the Arrange window.

The Snap value applies as usual.



A new Part is then created, playing the segment you dragged.



Saving and Loading the Pool

The Pool is automatically saved with the Song. However, by using the Load and Save Pool commands on the pop-up File menu, you can freely save Pools and load them into Songs.



Saving

1. Select Save Pool from the File Pop-up menu.
2. In the dialog box that appears, specify if you want to save all files and segments, or just the selected ones.
3. In the standard dialog box that appears, specify a name and a location for the file.



A Pool document as it looks in the Finder.

-
- The audio files themselves are not saved in the Pool file, only a reference to them. You should probably not move any audio file(s) until next time you want to use the Pool. You should definitely not delete them!
-

Loading

A Pool file is opened (loaded) just like any other file. When you load a Pool file, the files in it are *added* to the current Pool.

13

Importing and Exporting Audio

Importing Audio

You can import audio into the Song, from the Arrangement or from the Pool. Use the former when you want to position the file on a Track directly, and the latter when you plan to edit the file before using it in an Arrangement.

File Specifications

The files that you import must meet the following specifications:

- The file must be in AIFF (Audio Interchange File Format) or SD2 (Sound Designer 2) format.
- It can be in Mono or Stereo.
- The sample rate must be 44.1kHz.
- The file must have 16 bit resolution.

Naturally, the files created by Cubasis AV fit into these specifications.

Importing into the Arrangement

The Import Audio item on the File menu imports a file into the Arrangement as follows:

1. **Select the Track where you want the audio file to appear.**
2. **Set the Left Locator at the point where you want the file to start.**

3. Select Import Audio File from the File menu.

A file dialog appears.

4. Locate the file, select it and click OK.

The following now happens:

- The audio file is added to the Pool.
- A segment is created, that plays the entire audio file.
- A Part, playing the segment, is created and positioned on the selected Audio Track, starting at the Left Locator position.

Into the Pool

This is described on [page 190](#).

Exporting Audio

Exporting from the Arrangement

It might happen that you want to turn the whole or parts of an Arrangement into a single audio file. There are mainly three reasons for doing this:

- You are running out of audio Tracks and decide to “merge” for example a number of vocal overdubs into one recording, instead of keeping each overdub on a separate Track.
- You have set up some processing (volume changes, treble and bass settings, effects etc) that you want to make a permanent part of a new file.
- You want to export the Arrangement for use in another program or for use in for example a QuickTime movie (see the chapter “[Movies](#)”).

Performing the Audio Mixdown

1. Set up the Tracks to play as intended.

This includes making settings in the Inspector and in the Audio Mixer window.

Please note the following:

- Muted Tracks will not be included in the Mix.
- Monitored audio channels will not be included in the Mix.
- Make sure the levels are set correctly so that no clipping occurs and that the overall volume is not *too* low. Use the Audio Mixer to check the levels.

- The volume and fade set up for individual Parts in the Inspector will be used for the Mix.
- All settings in the Audio Mixer will be used for the Mix.

2. Set up the Left and Right Locator as desired.

Only the section between the Left and Right Locator will be included in the new audio file.

3. Select Export Audio File from the File menu.

A dialog box asks you for a new file name.

When the processing is done, a new file is created on the hard disk. This can then (if desired) be re-imported into the Pool or an Arrangement.

File Specifications

The files created when exporting have the following specifications:

- AIFF (Audio Interchange File Format).
- Stereo.
- 44.1kHz sample rate.
- 16 bit resolution.

Tips and Tricks

Audio mixdown can be used practically and creatively. Below follow a few tips:

- Set up a fade between two recordings and do a Mix of the two into a new audio file.
- Set up a fade or other effect on one audio file only. Mix it down to a new file to make the change permanent.
- Add bass/treble changes or effects to a sound, solo it and mix the processed sound down to a new file. Then play back this processed recording instead of the original, and deactivate the bass/treble/effects that were previously used. This will allow you to add more bass, treble or effects to the same recording!

Exporting from the Pool

This is described on [page 191](#).

14

The MIDI Editors - General Information

What can I do with the MIDI Editors?

When you record MIDI data, you fill Parts with notes and other MIDI “Events”. But you don’t really get to see and manipulate those Events individually from the Arrange window. In the MIDI editors you do!

Different types of Events and where to find them

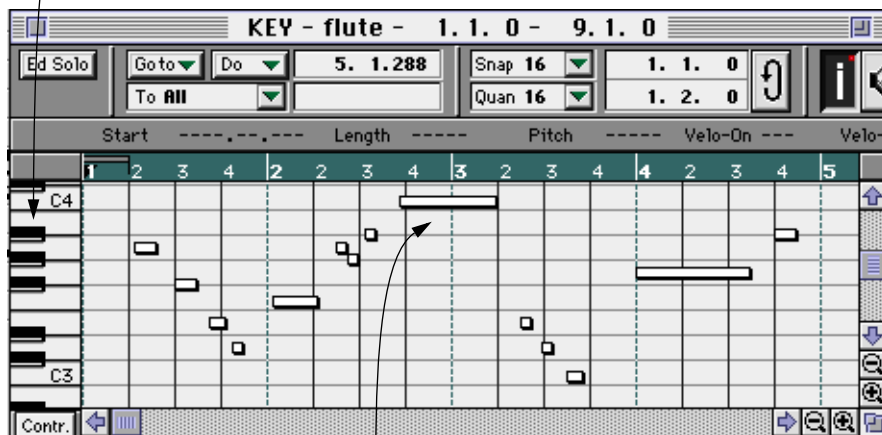
On the following pages we’ll list the different types of MIDI data that Cubasis AV can record, and how and where they are displayed for editing.

Notes (Note On and Off messages)

Notes are displayed in all MIDI editors. Let's look at a simple melody line and how it is shown in the different editors:

In Key Edit

The piano keyboard to the left is there to make it easy to find the right pitch when inputting or editing notes.



The notes are shown as boxes, with higher notes higher up in the grid.
The note length is indicated by the width of the rectangle.

In List Edit

The notes are shown both in the list to the left, and in the graphic display to the right.

The screenshot shows a music software interface titled "LIST - flute - 1. 1. 0 - 9. 1. 0". The interface is split into two main sections: a list on the left and a graphic display on the right.

List Section:

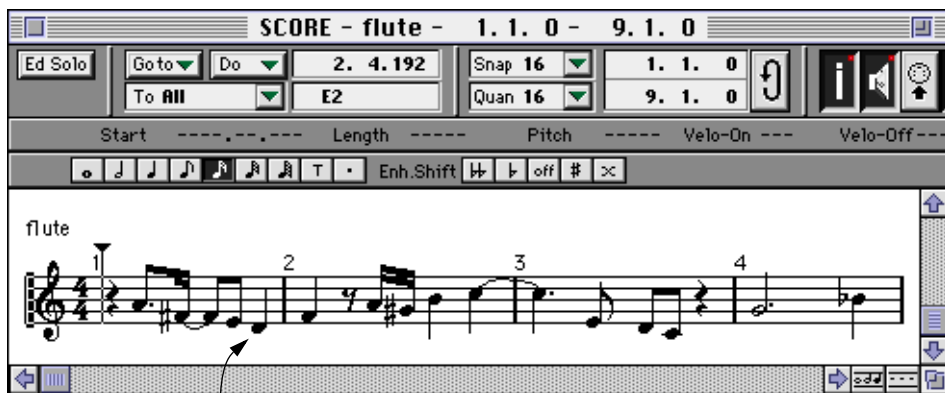
	Start Position	Length	Val1	Val2	Val3	Event Type
••	1. 2. 48	192	A3	110	64	Note
	1. 3. 0	192	F#3	110	64	Note
	1. 3. 288	144	E3	74	64	Note
	1. 4. 96	96	D3	110	64	Note
	2. 1. 48	384	F3	79	64	Note
	2. 2. 192	96	A3	74	64	Note
	2. 2. 288	96	G#3	42	64	Note
	2. 3. 48	96	A#3	53	64	Note
	2. 3. 336	816	C4	74	64	Note
	3. 2. 192	96	E3	90	64	Note

Graphic Display Section:

The graphic display shows a piano roll with notes represented by black bars. The notes are aligned with the list on the left. The piano roll has a vertical axis for pitch (MIDI notes) and a horizontal axis for time. The notes are labeled with their start and end positions in the list.

The black bar graphs are for graphically displaying and editing MIDI "Value 2" in every Event. In the case of notes, "Value 2" is the velocity value.

In Score Edit



In Score Edit, notes are displayed and edited just as notes in a printed score.

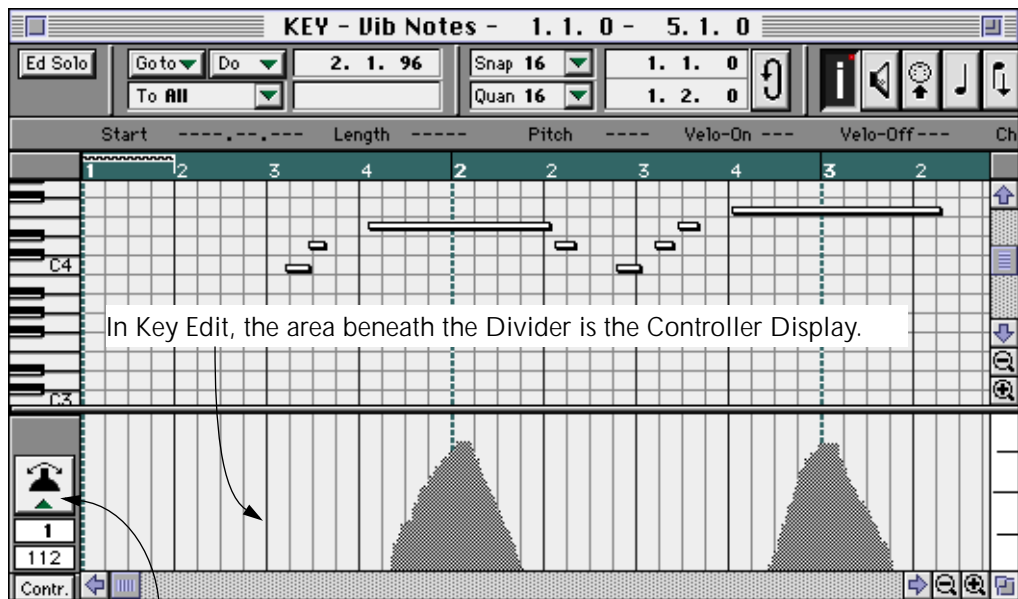
Continuous Events

In MIDI, various types of MIDI messages are used to transfer continuous changes. To be exact, these types are:

- Aftertouch (Channel Pressure).
- Pitch Bend.
- Controllers, like sustain pedal, MIDI Volume, Modulation wheel etc.

To be really exact (not to say pedantic!) some of these are not really continuous. Sustain Pedal for example can only be down (On) or up (Off). However, the MIDI specification groups all these messages as Continuous messages, and so does Cubasis AV.

Continuous messages are shown and edited in Key Edit and List Edit:



Clicking on this icon brings up a pop-up menu, allowing you to select which type of continuous data should be shown. In this case, modulation wheel Events are displayed.

The "mountains" of continuous data in the Key Edit window above are in reality a large number of single Events. This becomes clear when looking at the same data in the List Edit Window on the next page:

The modulation Events are listed in their playback order.

Value 2 for each Event is shown in the list and in the bar display. The grey color indicates non-note Events.

The screenshot shows a software interface with a title bar "LIST - Vib Notes - 1. 1. 0 - 5. 1. 0". Below the title bar are several control buttons and dropdown menus: "Ed Solo", "Goto", "Do", "To All", "Notes", "Quan 16", "Snap 16", and two sets of "1. 1. 0" and "1. 2. 0" buttons. The main area is divided into a table on the left and a bar display on the right.

Start Position	Length	Val 1	Val 2	Val 3	Event Type
2. 1. 197	----	1	50	---	Modulation
2. 1. 208	----	1	46	---	Modulation
2. 1. 218	----	1	40	---	Modulation
2. 1. 229	----	1	36	---	Modulation
2. 1. 240	----	1	32	---	Modulation
2. 1. 251	----	1	28	---	Modulation
2. 1. 261	----	1	22	---	Modulation
2. 1. 272	----	1	14	---	Modulation
2. 1. 283	----	1	8	---	Modulation
2. 1. 294	----	1	4	---	Modulation
2. 1. 304	----	1	0	---	Modulation
2. 2. 52	94	D4	58	0	Note
2. 2. 307	106	C4	62	0	Note
2. 3. 80	83	D4	58	0	Note
2. 3. 178	88	E4	55	0	Note
2. 4. 17	879	F4	86	0	Note
2. 4. 175	----	1	6	---	Modulation

The bar display on the right shows a timeline with vertical lines representing events. The first four lines are grey, corresponding to the modulation events in the table. The subsequent lines are white, corresponding to the note events. The values in the table (Val 1, Val 2, Val 3) are represented by the height and position of the bars in the display.

- Please note that only the most common Continuous Controller Events are shown in Key Edit. These are Aftertouch (Channel Pressure), Pitch Bend, Modulation, Main Volume, Pan and Velocity. To display, create or edit other types of Continuous Events, use List Edit.

Program Change messages

A Program Change message is a MIDI Event, telling a connected MIDI device to switch to another Program (e.g. a sound in a synthesizer, a setting in a reverb device, etc.). You can record Program Change messages into Cubasis AV like any other Event. If you want to edit (or create new) Program Change messages, it can be done in List Edit. See the the chapter “[List Edit](#)”.

System Exclusive messages

System Exclusive messages are a special kind of MIDI Event, intended for detailed control of the parameters of a MIDI device. Since all devices have different parameters, each major manufacturer of MIDI devices has a special ID code that is included in the System Exclusive message.

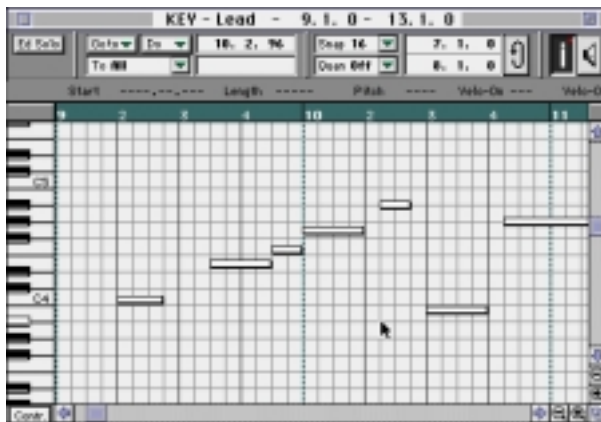
Cubasis AV can record and play back System Exclusive messages, but they can not be edited or created from scratch.

Opening An Editor

By double clicking on one Part

Lead

If you only want to open one Part into an editor, simply double click on it.



Which editor opens depends the “Double Click Opens” setting:

1. Pull down the Options menu and position the pointer on the Double Click Opens item.

A submenu appears.

2. Select one of the three items on the submenu.

You can choose between Key, Score and List Edit.

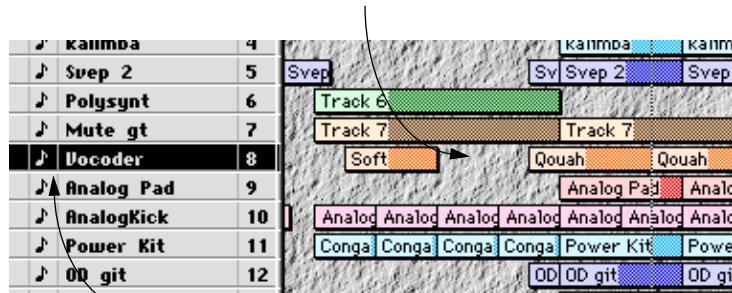
3. Save your Song.

If you want this setting to be valid for all new Songs, you should set up your “Autoload” song for this. See [page 334](#).

Editing a complete Track

You can edit all Parts on a Track at the same time:

1. Make sure no Parts are selected, by clicking somewhere in an empty area of the Arrange Window.



2. Select the Track you want to Edit.

3. Select the preferred editor from the Edit menu or use the keyboard equivalents.

Edit	Parts	Function
Undo		⌘Z
Cut		⌘H
Copy		⌘C
Paste		⌘V
Delete Parts		
Select All		⌘A
Edit		⌘E
List		⌘G
Score		⌘R
Mastertrack		⌘M

Editing more than one Part

You can edit any selection of Parts, even Parts on different Tracks at the same time. The only restriction is this:

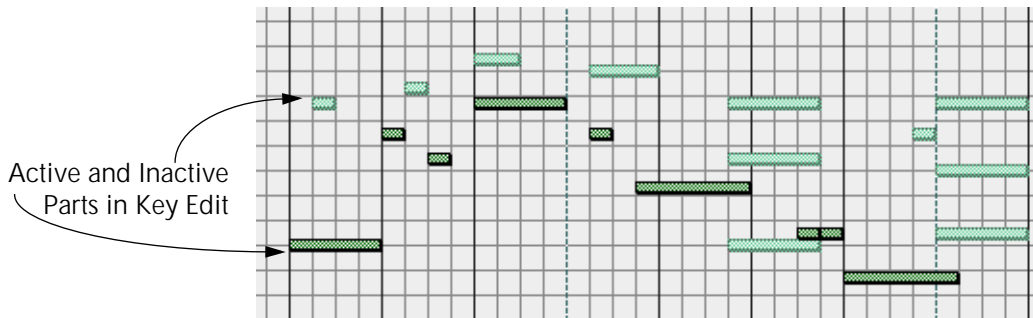
-
- List Edit can only be used to edit Parts that are all on the same Track.
-

1. Select the Parts you want to Edit.

2. Select the preferred editor from the Edit menu or use the keyboard equivalents.

The editor opens, showing the selected Parts at the same time. However, only one at a time is active. The active and inactive Parts are separated graphically:

-
- In Key Edit, notes belonging to an *active Part* are brightly colored or white (dark or black when they are selected, see below) and notes belonging to an *inactive Part* are dimmed (and grey when selected). In Score Edit, different Parts are put on different note systems.
-



- 3. To activate a Part within an editor, click on any Event belonging to that Part.**
You can also use the Next/Previous Part commands on the Goto pop-up menu, which is convenient if the Part is empty.

If you haven't recorded any Part yet

You might want to open the editor to input notes from scratch, without recording anything first. In this case you have to create a Part, using any of the methods described on [page 112](#).

About Recording and Playback

Basically, anything you can do in the Arrange window that relates to playback and recording, can also be done in the editors.

Realtime

Like everything else in Cubasis AV, editing can happen in realtime. This means that you can edit while the music is playing or actually even while you are recording!

Step Recording

If you prefer not to record your music in real time, you may use the Step Recording function to input music one note at a time. This is explained in the chapter “**Step Recording**”.

Follow Song



If Follow Song on the Options menu is turned on, the Edit window will scroll automatically during playback, so that the current Song Position is always visible.

- You may also press [F] on the computer keyboard to turn Follow Song on and off.

Ed Solo



When this button is activated, you will only hear the Track/Parts that are currently being edited. All other Tracks are muted. Use this function when you want to concentrate on editing the Parts in the editor, rather than hearing the music in its context.

Cycle



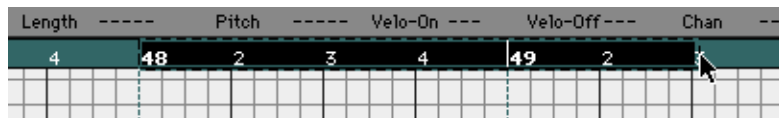
If the Cycle button on the Transport Bar is activated, a certain section of your arrangement will be repeated over and over as described in the chapter “[Cycled Playback and Recording](#)”. This is very handy for editing where you can fine-tune a recording and instantly hear the result without having to Rewind and Play to get to the right section.

The Loop Function

In all of the MIDI editors you can set up a local Loop, which is a sort of "mini-cycle" for the Parts being edited. The Loop facility operates in addition to the Cycle, meaning you can Loop the Parts you are editing *while* Cycling Parts that are not being edited!

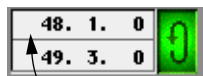
There are three ways to set the Loop:

- Drag the mouse on the Position Bar to draw the Loop area.



This does not work in Score Edit, since it has no Position Bar.

- Use the mouse and/or computer keyboard to set the values in the Loop boundary boxes on the Status Bar.



The Loop On/Off button

The upper value is the start of the Loop, the lower is the end.

- Use [Option]-[L] and [Option]-[R] to open the Loop boundary boxes and enter the values.

Either way, the current Loop is shown in black on the Position Bar when it is on, and in grey when it is off.

Turning the Loop on or off

Turn the Loop on/off by clicking on its button or by pressing [Option]-[O]. For this to work, you have to define the Loop first, as explained above.

When the Loop is active, the Parts within the Loop in the Edit window loop almost independently of the rest of the music. We say "almost", because the Loop is still dependent on the Cycle. Every time the Cycle starts over again, so does the Loop.

The Loop is also used to direct editing to the Events inside the Loop. See [page 225](#) in this chapter.

Playback Parameters

The Playback settings you may have done in the Inspector are not visible when you edit the Part. This means that if a Part is transposed using the Inspector, it will be shown at its original recorded pitch in the editor, even though you will hear it playing back transposed.

Moving around and the Goto pop-up menu

You can move directly to certain useful positions in an editor by selecting from the Goto menu on the Function Bar. These options will scroll your view to show the Events at the chosen position.

Song Position	Takes you to the Song Position.
First Event	Takes you to the first Event in the active Part.
Last Event	Takes you to the last Event in the active Part.
First Selected	Takes you to the earliest of all the selected Events.
Next Selected	Takes you to the next selected Event.
Last Selected	Takes you to the last of the selected Events.
Prev Selected	Takes you to the selected Event before the one currently in view.
Next Part	Takes you to the beginning of the next Part. This might just lead to a vertical scroll if there are several Parts beginning at the same Position.
Prev Part	Takes you to the beginning of the previous Part. This might just lead to a vertical scroll (see above).



-
- The Goto commands don't affect selection in any way. They only change the view as if the scroll bars were used.
-

Creating Events in the Editors

This is mainly done with various tools from the Toolboxes:

- The Pencil tool is used to “draw” notes and other Events in Key and List Edit (see [page 238](#) and [page 265](#)).
- The Paint Brush tool is used to “paint” series of notes in Key and List Edit (see [page 240](#) and [page 265](#)).
- The Note and Rest tools are used in Score Edit, to create notes and rests respectively (see [page 282](#)).

Creating notes with the Fill function

All the editors have a pop-up menu named “Do”. The contents of this pop-up menu varies with the different editors, but all include a function called “Fill”.



This function only works when the To menu is set to "All Events", "Looped Events" or "Cycled Events" (see [page 225](#)). It then fills the whole Part/the Loop/the Cycle with notes that have the same pitch. The notes are spaced according to the Snap value and are all given a length corresponding to the Quantize value.

Monitoring Events in the Editors

As already mentioned, you can have playback running while you are editing. And, you can also use the cue function (see [page 84](#)) in the Edit windows. But there are two more ways to listen to your music in the editors:

The Magnifying Glass

The Magnifying Glass tool is common to all MIDI editors. When you click on an Event using this tool, the Event is played back. You can also hold the mouse button and drag the Magnifying Glass around over the Events.



The Speaker

When you click on the speaker symbol on the Status Bar, Events will be output automatically when you click on them, when you create them using the pencil or paint brush, and when you make changes on the info line.



Selecting Events in the Editors

Selecting Events in the editors is done just like selecting Parts in the Arrange window, described on [page 113](#). You can:

- **Click on an Event to select it (and deselect all others).**
- **Hold [Shift] and click on an Event to select it, adding to any previous selection.**
- **Select several Events by enclosing them in a rectangle using the Arrow tool.**
- **Press [Command]-[A] to select all Events in the editor.**
This is the same as using the Select All item on the Edit menu.
- **Use the [←] and [→] keys to select the previous/next Event in the Active Part.**
If you hold down [Shift] and use the arrow keys, the next/previous Event will be selected, without deselecting already selected Events.

Selecting Events from different Parts

You can select Events from both an active and an inactive Part:

1. **Select the Events you want in the active Part, using any method described above.**
2. **Hold down [Shift].**
3. **Select one Event from an inactive Part by clicking on it.**
This Part now becomes active.
4. **While keeping [Shift] pressed, use any method to select more Events from the now active Part.**
As long as you keep [Shift] pressed, you can switch active Parts and select from as many as you like.

-
- Any type of editing you do (like moving, copying and so on) will affect all *selected* Events, whether they are in active or inactive Parts.
(Note, however, that the setting on the To pop-up menu may further restrict which Events are affected, see below.)
-

-
- When you record, use Step Input or make any other changes via MIDI, it is always the active Part that is affected.
-

The To Pop-up

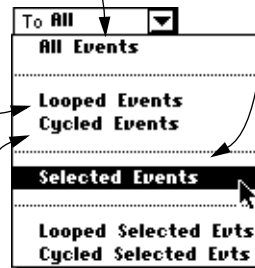
All the editors have a pop-up menu called “To”. This is used together with the Loop and Cycle functions to collectively choose a group of Events to be affected by your editing.

All Events, active or inactive, will be affected.

All Events inside the Loop will be affected, regardless of whether the Loop is On or Off, or whether the Events come from active or inactive Parts.

All selected Events, inactive or active, will be affected.

Those Events that are inside the Loop and selected will be affected.



All Events inside the Cycle will be affected, regardless of whether the Cycle is On or Off, or whether the Events come from active or inactive Parts.

Those Events that are inside the Cycle and selected will be affected.

About Editing

This is done differently in every editor, using the various tools in the Toolboxes. Refer to each editor's chapter for detailed information about how to use the different tools.

Quantize and Snap Values in the Editors

The Quantize and Snap values work exactly as in the Arrange Window (see [page 120](#)). However, there are a couple of things worth pointing out:

- **Each editor has separate settings for Quantize and Snap values.**
This means that the settings you make in the Key Edit window will not automatically be transferred to Score Edit. This is practical, due to the different work methods you will employ in the different editors.
- **The Quantize value also determines the length of input notes.**
If for example you have the Quantize value set to 8, the notes you create will automatically become 1/8-notes.
- **The Snap value also defines the spacing between input notes.**
This applies when you use the paint brush or the Fill command from the Do pop-up. With a Snap value of 4 and a Quantize value of 16, you will get sixteenth notes, positioned on the beats (quarter-note positions).

- **The Snap pop-ups in the editors contain more options than the one in the Arrange Window.**

This is because, unlike when moving Parts, you may need small or uneven Snap values in the editors. The following Snap values are available:

The values 2 - 7 are values in ticks, allowing high precision editing and moving.

Snap 7pp ▼		
OFF	
3	2	4
6	5	7
64	T	.
32	T	.
16	T	.
8	T	.
4	T	.
2	T	.
1	T	.

The values ranging from 64 to 1 are regular note values. Triplets (T) and dotted (.) note values can be selected.

Editing Notes via MIDI

You can change the properties of notes via MIDI. This can be a handy and fast way to get for example the right velocity value, since you will hear the result even as you edit:

1. **Select the note you want to edit.**
2. **Click on the MIDI Connector symbol on the Status Bar.**



The symbol should be "lit". This enables editing via MIDI.

3. Use the Note buttons on the Status Bar to decide what properties will be changed by the MIDI input.

You can enable editing of Pitch, Note On- and/or Note Off-velocity.



With this setting, the edited notes will get the Pitch and Velo-off values of the notes inputted via MIDI, but the Velo-on values will be kept as they are.

4. Play a note on your MIDI instrument.

The note selected in the editor will take on the properties of the played note, according to the setting made in step 3.

The next note in the active Part automatically gets selected. A series of notes can therefore quickly be edited.

- **If you want another try, select the note again (easiest by pressing the [←] key on the computer keyboard) and again play a note on your MIDI Instrument.**

The Info Line

At the top of the Key and Score editors, you have the Info Line. The Info Line shows the values for one selected note. The values can be edited, just as in the List in List Edit:

1. To show/hide the Info Line, click on the **i**-button on the Status Bar or press **[Option]-[I]** on the computer keyboard.



When the "i" button is lit, the Info Line is shown.

Start	6.	3.	0	Length	384	Pitch	E4	Velo-On	83	Velo-Off	64	Chan	3
-------	----	----	---	--------	-----	-------	----	---------	----	----------	----	------	---

2. **Select a single Event.**

Its values are shown on the Info Line.

If no Event or several Events are selected, the Info Line shows "—" for all values.

3. **Change the desired values using regular value editing.**

As always, you can use the mouse or type in values from the computer keyboard.

Info Line Parameters

The following parameters can be changed on the Info Line:

Parameter	Remark
Start	Changing this value is the same as moving the note.
Length	In ticks.
Pitch	Changing this value transposes the note.
Velo-On	The Note On velocity; the speed with which you press a key on a MIDI keyboard.
Velo-Off	The Note Off velocity; the speed with which you release a key on a MIDI keyboard.
Chan	The “original” MIDI Channel associated with the note. In Cubasis AV, this value is of no relevance.

-
- Not all MIDI Instruments send and/or read velocity (especially true with Note Off velocity). Check your instrument’s operation manual if you are unsure.
-

Cutting, Copying and Pasting

You can use the Cut, Copy and Paste commands to move Events between editors or to duplicate a series of Events.

- **Cut or Copied Events are Pasted in starting at the Song Position. The Events will keep their relative positions, pitch and other properties.**

Deleting Events

To delete Events:

- **Click with the Eraser tool on the Events you want to delete.**
- **Select the Event(s) you want to delete and press [Backspace].**

or

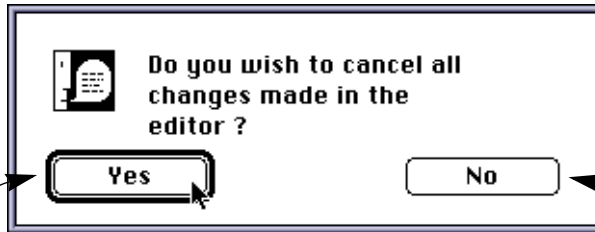
- **Select the Event(s) and select Delete from the Edit menu.**

Closing the Editor

There are two ways of closing the editor, “Cancelling” and “Keeping”.

Cancelling

If you press [Esc] (escape) on the computer keyboard, a dialog box allows you to change your mind:



“Yes” will cancel all changes you have made since you opened the editor.

“No” will exit the editor, but keep your changes.

Cancelling can be thought of as a super-undo. It allows you to try out a series of changes to a recorded piece of music and then easily revert back to its original state.

Keeping

If you close the editor by clicking the window's Close box or by pressing [Return], the window closes and all the editing you have done is kept.

The "Keep Appended Events?" Dialog

If you close the editor and a dialog appears asking you if you want to "Keep appended Events", this is because you have added Events outside the Part(s) being edited.



- If you click "Yes", the Part will be extended to encompass the added Events.
- If you click "No", the Events outside the Part will be discarded.

Which Editor should you use?

This of course depends on your individual way of working. However, the following suggestions may help you find your way:

Use Key Edit when...

- You want to get a quick overview of the Events.
- You want to edit several Parts at the same time.
- You're editing Pitch Bend, Aftertouch, Main Volume, Modulation, Pan or Velocity values.

Use List Edit when...

- You need to perform detailed editing of single Events.
- You're editing other kinds of Continuous Controllers than those available in Key Edit.

Use Score Edit when...

- You are used to reading and writing scores.
- You are preparing your music for printing.

-
- Key and Score Edit can be used to edit any combination of Parts from different Tracks. List Edit can only be used for Parts on one Track at a time.
-

15

Key Edit

Overview

Key Edit displays notes as boxes with higher notes higher up in the display, and the width of the boxes corresponding to the note lengths. The piano keyboard to the left is there to make it easy to find the right pitch when inputting or editing notes.

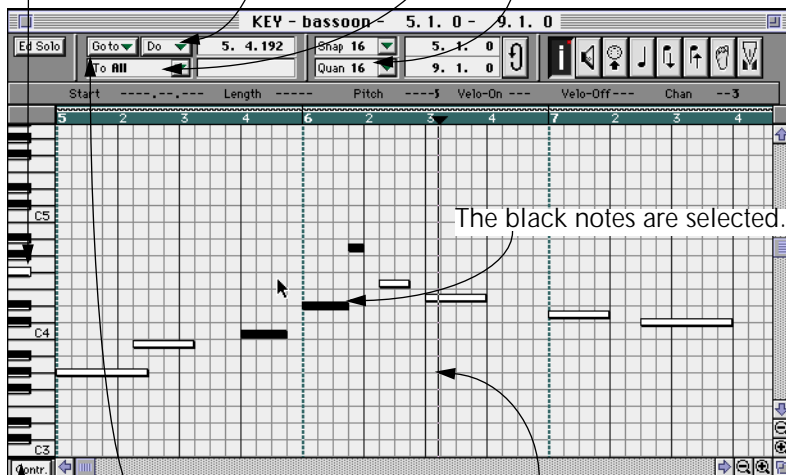
Key Edit also lets you display and edit Continuous Controllers (such as Pitch Bend, Modulation, Aftertouch, etc.) in a graphic Controller Display, as described on [page 249](#).

Below you will find a description of some of Key Edit's main features:

The position of the mouse pointer is shown both in the Mouse Box and on the Piano keyboard.

The Do and To pop-ups.
See [page 225](#).

The Snap and Quantize boxes.



The black notes are selected.

The Goto pop-up is used for moving the view.

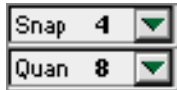
The Song Position Pointer

Clicking here opens the Controller Display.

Entering Notes

Using the Pencil tool

1. Set the Snap value to the smallest position at which you want to enter a note.
2. Set the length of the note to be entered by changing the Quantize value.

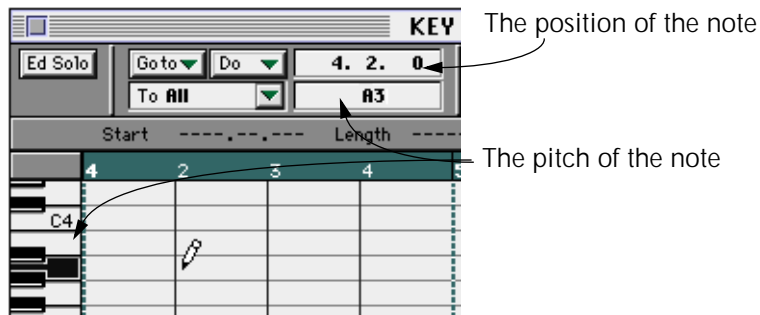


For example, if you want to enter eighth notes at quarter note positions, set the Quantize value to "8" and Snap to "4".

3. Select the Pencil tool from the Toolbox, and move the pointer onto the note display.

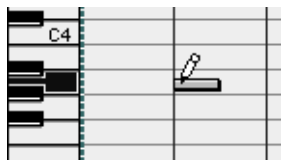
4. Aim at the correct position.

The piano keyboard to the left and the two fields on the Status Bar will help you by showing the pitch and position.

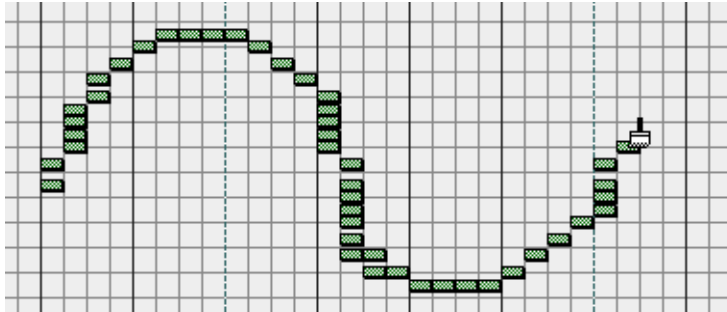


5. Click once with the mouse.

The note appears.



Using the Paint Brush tool



Use the Paint Brush to ‘paint’ in several new notes at a time:

1. **Select the Paint Brush tool.**
2. **Position the pointer where you want the first note to be.**
3. **Press the mouse button and drag the pointer.**

Notes are created according to the following rules:

- The notes are created at a spacing defined by the Snap value.
- The notes get the length of the Quantize value.
- If you hold down [Shift] on the computer keyboard, movement is restricted to a horizontal direction only when you are dragging (that is, all notes will have the same pitch).

The Insert Button



The Insert button

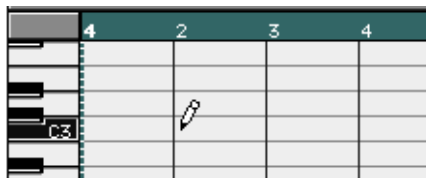
If the Insert button is activated on the Status Bar when you use the Pen or Brush, then all Events in the Part will be moved one Quantize value forward when you input new Events, just as with Step Input (see the [Step Recording](#) chapter).

-
- You can also create new Events using the Fill function on the pop-up Do menu, see [page 221](#).
-

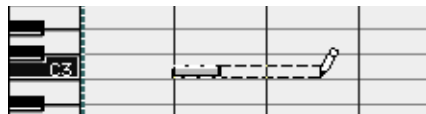
Setting the length while drawing

You can easily set note lengths to something else other than the quantize value, while entering them. The *Snap value* still applies so you can only set the Length to even multiples of this value.

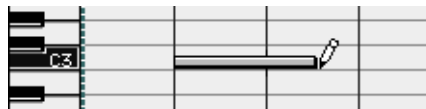
1. Aim with the Pencil at the correct position and pitch.



2. Press the mouse button and drag to the right with the button pressed.



3. Release the mouse button. The Event is adjusted to the closest Snap value.



Determining the note's velocity

The Notes you enter have a fairly high velocity. In Key and List Edit you can change it by holding down modifier keys while clicking. Use the following modifier keys:

Velocity	Modifier key
High (110)	None
Medium - high (96)	[Command]
Medium (64)	[Option]
Low (48)	[Command]+[Option]

Manipulating Notes

Selecting Notes

This is done with the Arrow tool, just like selecting Parts in the Arrange window:

- Click on a note to select it.
- Hold down [Shift] and click to select several notes.
- “Draw” a rectangle around several notes to select them.

You may also use the left and right arrow keys on the computer keyboard to select the previous or next Event in the editor.

- **If you select a single note, its values will be shown on the Info Line.**
You can use the Info Line for detailed editing of single notes, as described on [page 229](#).

Moving Notes

1. Select the Arrow tool.

2. Set the Snap value.

If you want to be able to move the note(s) to even quarter note positions only, set Snap to 4. If you want to move them to even eighth note positions, set Snap to 8, etc. This works just like when moving Parts in the Arrange Window (see [page 120](#)).

3. Select the note(s) you want to move.

4. Position the pointer over one of the selected notes and press the mouse button.

The pointer takes on the shape of a hand.

- **If you hold down [Shift], movement is restricted to either vertical or horizontal.**

Use this if you only want to transpose the notes, or move them without transposing.

5. Drag the note(s) to the new position and release the mouse button.

A dotted outline of the note(s) is shown while you drag.

Duplicating Notes

1. Select the Arrow tool.
2. Set the Snap value as for moving notes (see the previous page).
3. Select the note(s) you want to duplicate.
4. Hold down [Option] on the computer keyboard.
5. **Position the pointer over one of the selected notes and press the mouse button.**
The pointer takes on the shape of a hand.
 - **If you hold down [Shift], movement is restricted to either vertical or horizontal.**
Use this if you want move the duplicated notes in one direction only.
6. **Drag the note(s) to the new position and release the mouse button.**
A duplicate set of notes is created and positioned where you drag them.

Resizing Notes with the Pencil tool

You can change the size of notes that you have drawn or recorded, using the Pencil tool:

- 1. Set the Snap value.**

What you do when you resize a note, is to move the end position of that note. You can only resize in multiples of the set Snap value. That means, if Snap is set to 8, you can move the end-position of a note to 1/8, 1/4, 3/8, etc.

- 2. Press the mouse button with the Pencil pointer inside the note you want to resize.**

-
- It might be hard to determine whether you have the pointer inside a note or not. To avoid painting in new Events, activate [Caps Lock] on the computer keyboard. This disables creation of new Events. Remember to deactivate [Caps Lock] when you have finished resizing the notes.
-

- 3. Position the pointer at the length you want the note to have, and release the mouse button.**

The note gets resized, taking the set Snap value into account.

Deleting Notes

To delete notes:

- **Select the Eraser tool and click on the notes you want to delete.**
- **Select the note(s) you want to delete and press [Backspace].**

or

- **Select the note(s) you want to delete and select Delete from the Edit menu.**

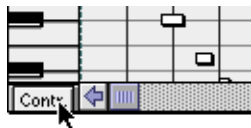
The Controller Display

This is the area in Key Edit that is used for graphically displaying and editing Velocity and Continuous Controllers.

Opening the Controller Display

- **Open the Controller Display by clicking on the Controller button below the piano keyboard to the left.**

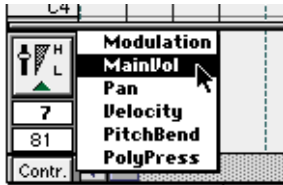
To close the Controller Display, click on the button again.



Determining which Controller to display

The Controller Display can show several types of continuous MIDI data, but only one at a time, of course. You decide which one yourself:

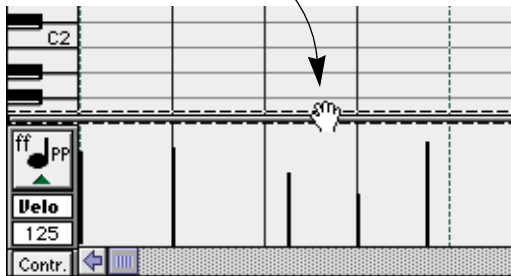
1. Open the Controller Display as described above.
2. Position the pointer over the Controller Icon and press the mouse button.



3. Select a Controller type from the pop-up menu that appears.
The numeric value below the icon shows the number of the displayed Controller.

Changing the size of the Controller Display

Drag the Divider up or down to enlarge or shrink the Controller Display.

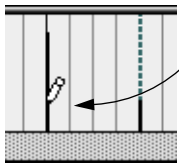


Editing Velocity

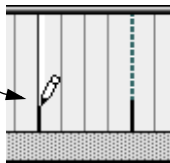
The velocity values are shown as bars, with higher bars representing higher velocity values. Since a velocity value is no Event in itself, but rather a property of a note, you cannot create, move or delete velocity values in the Controller display. However, if you move or delete a note in the Event Display, its corresponding velocity bar is moved or deleted as well.

Using the Pencil

Simply click on the velocity bar with the Pencil...



...to change its value.



To change a series of values, drag over them.

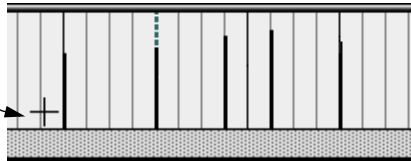
Using the Line Tool

To create a ramp of values, for example a fade-in or fade-out, proceed as follows:

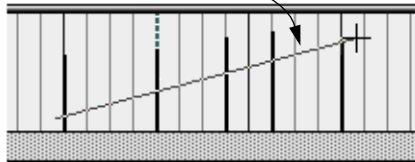


1. Select the Line tool.

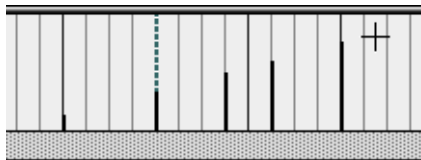
2. Position the pointer and press the mouse button.



3. "Draw" the outline of the ramp with the mouse button pressed.

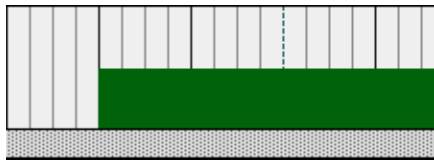


4. Release the mouse button. The velocity values are changed.



Creating Non-note Events

These include Aftertouch (Channel Pressure), Pitch Bend, Modulation, Volume and Pan. There is one very important thing to observe about non-note Events. If for example you put in one single MIDI Modulation wheel Event with a value of 63, this will be displayed like this:



The figure above might look like an "infinite" series of modulation Events all with the value 63, but it is not, it is only one. It is a graph of instantly moving the modulation wheel to position 63 *and leaving it there*.

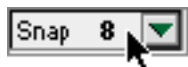
It is important to remember that if you draw, or in any other way input Controllers, this makes them stay at the last set value for an infinite amount of time (or until you change it the next time). Sustain pedal (damper) for instance, will vary between 0 and 127 every time you press or release the pedal, but stay at the last value as long as you don't move your foot on or off it. Draw in one "foot down" Event, and the notes will sustain until a "foot up" Event appears.

To create a non-note Event, proceed like this:

1. Select what type of data you want to add.

Use the Controller pop-up, as described on [page 250](#).

2. Set up the Snap value to decide what “density” you want for the Events.

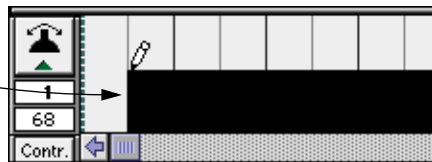


If for example you want to input one Event every eighth note, set the Snap value to “8”.

3. Hold down the [Option] key.

From here on there are basically three ways to go:

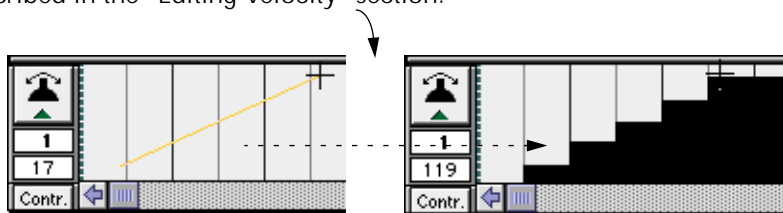
If you want to enter just one Event, click once with the Pencil.



If you want to “paint a curve”, drag the Pencil (with the mouse button pressed).



If you want to create a perfect ramp, use the Line tool as described in the “Editing Velocity” section.



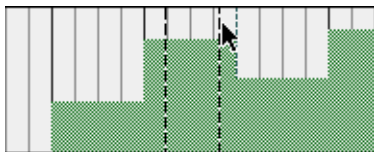
4. Release the [Option] key.

- All values range between 0 and 127, except Pitch Bend, which has a value range from -8192 to +8191. For Pitch Bend, value 0 is equivalent to no Pitch Bend (the Pitch Bend wheel/lever in center position).

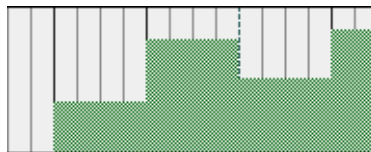
Selecting Non-note Events

This is done somewhat differently from selecting notes: You can't click on an Event to select it, rather you have to enclose it in a frame, using the Arrow tool. Note that it is the *start* of the Event that has to be enclosed:

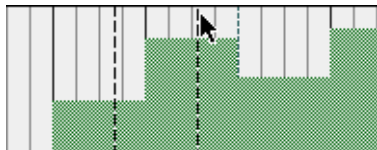
Drawing a rectangle like this...



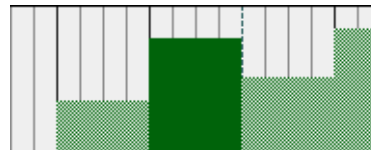
...selects nothing.



But this rectangle...



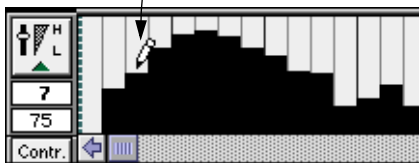
...selects one Event.



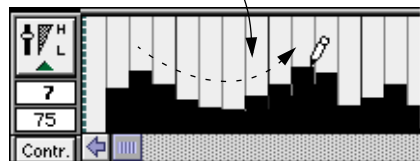
Editing Non-note Events

With the Pencil

To change one value with the Pencil, simply click on it.

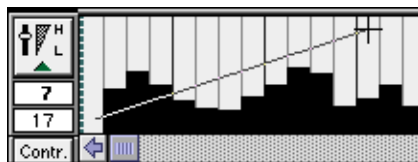


To change a series of values, drag over them.

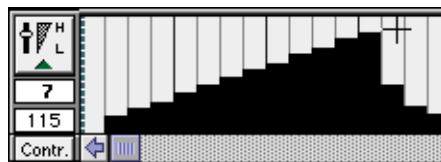


With the Line Tool

"Draw" a line with the Line tool...



...to create a ramp of values.



Deleting Non-note Events

You delete an Event in the Controller Display just like you delete notes:

- **Click on the Event with the Eraser tool.**
- **Select the Event and press [Backspace].**

or

- **Select the Event and select Delete from the Edit menu.**

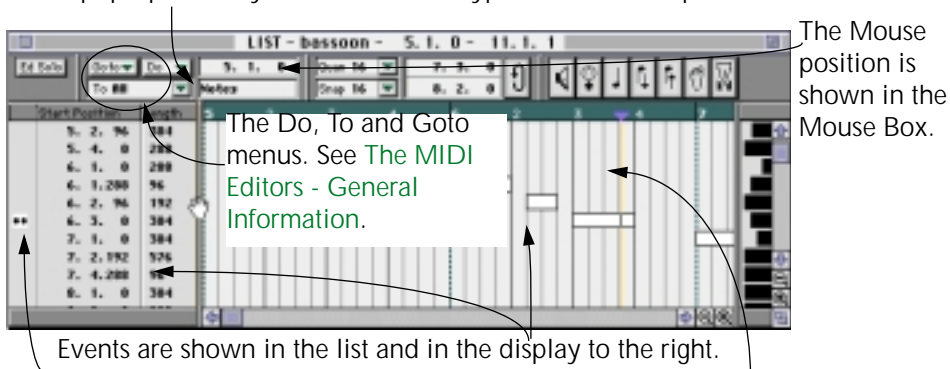
16

List Edit

Overview

Below you will find a description of some of List Edit's main features:

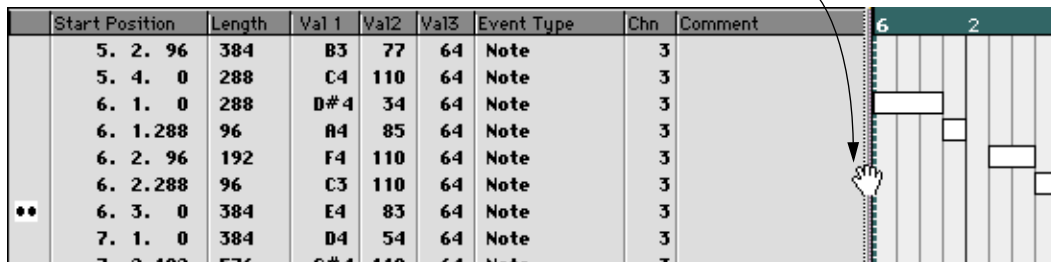
With the Insert pop-up menu, you decide which type of Events to input.



The Song Position is shown both in the Event list and in the Event display.

The Columns in the List

To make all columns appear, drag the Divider as far right as possible.



	Start Position	Length	Val 1	Val2	Val3	Event Type	Chn	Comment
	5. 2. 96	384	B3	77	64	Note	3	
	5. 4. 0	288	C4	110	64	Note	3	
	6. 1. 0	288	D#4	34	64	Note	3	
	6. 1.288	96	A4	85	64	Note	3	
	6. 2. 96	192	F4	110	64	Note	3	
	6. 2.288	96	C3	110	64	Note	3	
••	6. 3. 0	384	E4	83	64	Note	3	
	7. 1. 0	384	D4	54	64	Note	3	
	7. 2. 192	576	C#4	110	64	Note	3	

In List Edit, you can view and edit several types of Events. Common to the various Event types are the Start Position, Length and Chn parameters. As you expected, these show where an Event starts, its length in ticks and its MIDI Channel value, respectively. The table on the next page shows the other List columns and the parameters for the different Event types (the rows):

	Val 1	Val 2	Val 3	Comment
Notes	Pitch	Note On velocity	Note Off velocity	Not used
Poly Pressure	Note Number	Pressure Amount	Not used	Not used
Control Change	Controller Type	Change Amount	Not used	Not used
Program Change	Program Number	Not used	Not used	Not used
Aftertouch	Pressure Amount	Not used	Not used	Not used
Pitch Bend	Bend value (fine)	Bend value (coarse)	Not used	Not used

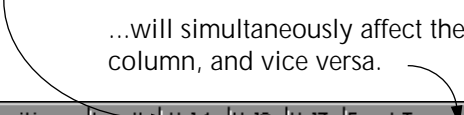
There is also a column named Event Type. For all Event types except Control Change (see below), this is just an explanatory value that can't be changed, e.g. "Note" for Note Events etc.

Transforming Controller Events

If you change Value 1 for a Control Change Event, you actually change the Controller from one type to another. To simplify this, the name of the Controller type is shown in the “Event Type” column in the List. You can change the value either in the “Val 1” column or the “Event Type” column.

Changing the value in the “Val 1” column...

...will simultaneously affect the “Event Type” column, and vice versa.



Start Position	Length	Val 1	Val2	Val3	Event Type
58. 1. 0	----	1	67	---	Modulation
58. 1. 0	96	04	110	64	Note
58. 1. 96	96	C#4	101	64	Note

Creating Events

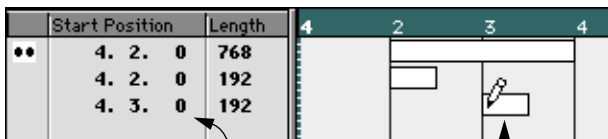
1. Use the Insert pop-up menu to decide what type of Event to Insert.



2. Set the Snap value to the smallest position at which you want to enter a note.
3. If you are entering notes, set their length with the Quantize value.

From here there are three ways to go:

- Select the Pencil or the Paint Brush and draw the Event in the Event display.

A screenshot of a software interface showing an event list and an event display. The event list is a table with columns 'Start Position' and 'Length'. It contains three rows of data. The event display is a piano roll with a horizontal axis representing time, divided into four measures labeled 1, 2, 3, and 4. A pencil icon is shown drawing a note in measure 3. An arrow points from the event list to the event display, indicating that the event appears in both.

	Start Position	Length
••	4. 2. 0	768
	4. 2. 0	192
	4. 3. 0	192

The Event appears both in the List and in the Event Display.

- **Activate Step Input by clicking on the foot symbol on the Status Bar.**
Step programming is described in [Step Recording](#).
- **Create notes with the Fill function on the Do pop-up menu, see [page 221](#).**

If you are inputting notes with the tools or the Fill function, they will have...

- The pitch C3.
- A Note On velocity of 110 (unless you have pressed modifier keys while inputting the note, see [page 243](#)).
- A Note-Off velocity of 64.

If you are using Step Input, the notes will have other properties, as described in the [Step Recording](#) chapter.

Editing in the List

The positions and values of Events can be edited in the List, using the regular procedures. There are some things to note:

- **If you hold down the [Option] key on the computer keyboard while you're changing a value, all Events of the same type will be set to the same value.** This means for example that all Notes, all Pitch Bend Events or all Control Change Events will be affected.
- **If you change an Event's Start Position, the List will be resorted.** The Events are always shown in the order they are played back, with the earliest Event at the top and the latest at the bottom.

Editing in the Event Display

Moving Events

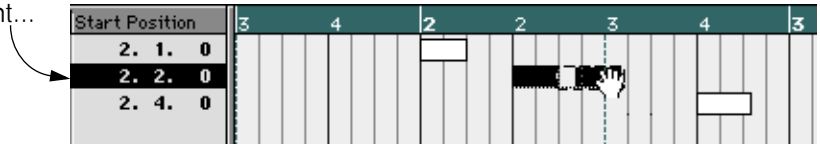
You can use the Arrow tool to move Events in the Event Display, much like in Key Edit. However, there is one big difference. This is how you should look at the horizontal and vertical positions:

- **The horizontal position of an Event in the Event Display is directly related to the Event's Start Position in the Song (just as in Key Edit).**

- The vertical position of an Event in the list is just related to the order of the Events. It has no *direct* relation to time.

An example:

Let's say we have three Events, positioned at 2.1.0, 2.2.0 and 2.4.0. If you move the middle Event a bit to the right...



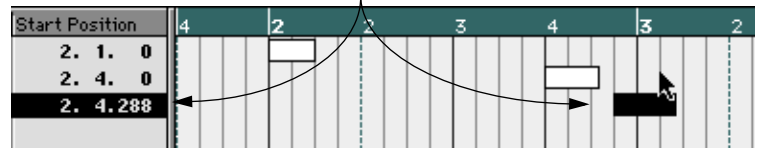
...it will still keep the exact same vertical position, since its position is still after the first Event but before the third.



But if you move the Event further to the right, past the third Event...



...the Event suddenly appears on another vertical position, since the order of the Events has been changed.



Changing the Lengths of Notes

You can click inside a Note Event and drag it to the desired length, using the Pencil tool. The new length is shown in the Length column in the List.

Editing in the “Value 2” Display

The graphical display to the right shows Value 2 for the Events in the List (where applicable) as horizontal bars. You may use this to change values, create ramps etc.

For note Events, the bars are black; for other Event types they are grey. This is to make it easier to distinguish different Event types from each other.



As you can see in the tables on [page 262](#) in this chapter, the Event types that use Value 2 are Notes, Poly Pressure, Control Change and Pitch Bend Events. Perhaps the most common use for the display is to edit Value 2 for Note Events, that is, the Note On velocity value.

- **You do not have to select the Pencil tool to change the bars in the “Value 2” display; the pointer automatically changes to the Pencil when you move it into the display.**

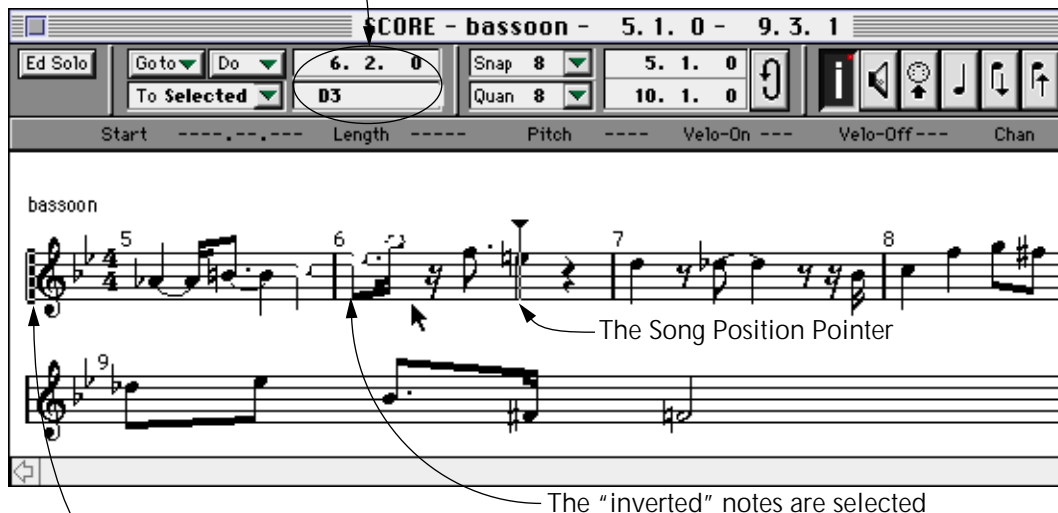
17

Score Edit

Overview

Score Edit displays your music as regular notation. Below you will find a description of some of Score Edit's main features:

The mouse position is shown in the mouse box and the pitch is shown as a note name in the box below. When you move a note, the lower box instead shows the amount of transposition in semitones.



If you are editing several Tracks at the same time, the black rectangle at the beginning of the score indicates the Active Track.

- If you are editing one Track, as much of it as possible is shown on several staves - one above the other - just as with a score on paper.
- If you edit Parts on several Tracks, they are put on a grand staff (multiple staves, tied together by bar lines).
- The number of measures across the screen depends on how many notes there are in each measure.
- The last measure is indicated by a double bar line.

Getting the Score displayed correctly

Time Signature

Score Edit always uses the Time Signatures specified in the Master Track.

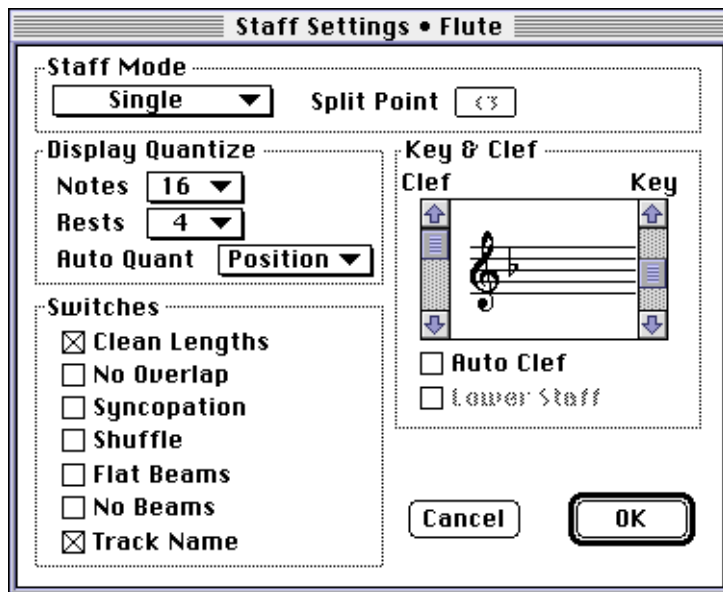
Staff Settings

When you open Score Edit for a Part recorded in real-time, the score may not look as legible as you would first expect. The Score editor can ignore the minor time variances in performance and make a neater score almost instantly. To achieve this, there are a number of settings in a *Staff Settings* dialog box that determine how the program displays the music.

There are two ways to open the Staff Settings dialog:

- Double click in the white area to the left of the staff.
- Activate a staff by clicking on the first bar line on any of the staves in the window. Then select “Staff Settings” from the Do pop-up menu.

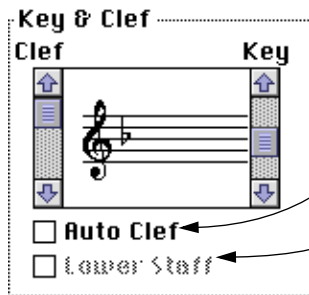
The Staff Settings dialog appears:



- The settings you do in this dialog box are independent for each Staff (Track), but common for a piano staff you create with Split Staff Mode.

Key and Clef

The correct Key and Clef are set using the two scroll bars in the Key & Clef section.



If you check the "Auto Clef" checkbox, the program attempts to guess the correct clef, judging from the pitch of the music.

To set Key and Clef for the lower Staff in Split mode (see below), activate the Lower Staff checkbox.

Display Quantize

Since the actual timing of recorded notes often varies slightly from the desired notation, the program can be told to "allow" such variations, and still display notes as if they were played perfectly in time. This is done using the Quantize section of the Staff Settings dialog.

-
- These are only display values used for the graphics in the Score Editor. They do not affect the actual recording in any way.
-

Here is a description of the functions:

Parameter	Description
Notes	<p>The smallest note value to be displayed. Set this to the smallest significant note value used in your music. If for example you set this to eighth notes, no note values smaller than eighth notes will be displayed. If you set it to a triplet value, the program expects all notes on this staff to be triplets.</p> <p>This setting is partly overridden by Auto Quantize (see below).</p>
Rests	<p>The smallest rest value to be displayed, as with the "Notes" setting described above.</p>
Auto Quantize	<p>Generally, if your music contains mixed triplets and straight notes, try activating this function by selecting "Position" from the pop-up menu. Otherwise leave it off.</p> <p>Auto Quantize uses involved methods to make your score look as legible as possible while allowing you to mix straight notes with triplets (triplets) in a Part. But, Auto Quantize also uses the (display) Quantize value. If it can't find an appropriate note value for a certain note or group of notes, it will use the set Quantize value. If the part is imprecisely played and/or complex, Auto Quantize may have a problem "figuring out" exactly what you "mean".</p>

Staff Mode

This pop-up lets you choose between Single mode (the “normal” mode) and Split mode. When Split mode is chosen, the Part is split on the screen into a bass and treble clef, as in a piano score. You use the Split Point value field to set the note where you want the split to occur. Notes above the split note will appear on the upper staff, and notes below the split note will appear on the lower staff.



Before and after setting a split at C3.

Switches

These provide additional options for how the score should be displayed:


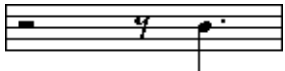
Parameter	Description
Clean Lengths	When this is activated, notes that are considered to be chords will be shown with identical lengths. This is done by showing the longer notes as shorter than they are. When Clean Lengths is turned on, notes with very short overlaps are also cut off; a bit as with No Overlap (see below), but with a more subtle effect.
No Overlap	When this is activated one note will never be shown as overlapping another, lengthwise. This allows long and short notes starting at the same point to be displayed without ties; the long notes are cut off in the display. This will make the music more legible.



An example measure with No Overlap deactivated...



...and with No Overlap activated.

Parameter	Description
Syncopation	<p>When this function is on (ticked) syncopated notes are shown in a more legible way.</p>  <p>This is a dotted quarter at the end of a bar when Syncopation is Off...</p>  <p>... and when it is On.</p>
Shuffle	<p>Activate this function when you have played a shuffle beat and want it displayed as straight notes (not triplets). This is very common in jazz notation.</p>
Flat Beams	<p>When this is ticked, the beams over the notes will be flat (as opposed to slanted).</p>
No Beams	<p>When this is ticked, there will be no beams whatsoever in the Part. This is good for example for vocal scoring.</p>
Track Name	<p>When this is activated, the name of the Track is shown at the beginning of the Staff.</p>

Closing the Dialog

- **When you have finished with the settings, close the dialog by clicking the OK button.**

This applies the settings to the active Staff/Track.

-
- Remember that the Staff settings are done independently for each Track.
-

Editing several Tracks

You may edit several Tracks simultaneously in Score Edit. The Tracks are shown as multiple staves, tied together by bar lines and placed in the order they appear in the Track List.

The Song Position Pointer

Trumpet 1

Trumpet 2

Tenorhorn

Selected notes

The Active Staff

Just as in the other editors, all MIDI input (as when recording from your instrument) is directed to one of the Tracks, here called the Active Staff. The Active Staff is indicated by a black rectangle in the left part of the first visible bar.



To make another Staff active:

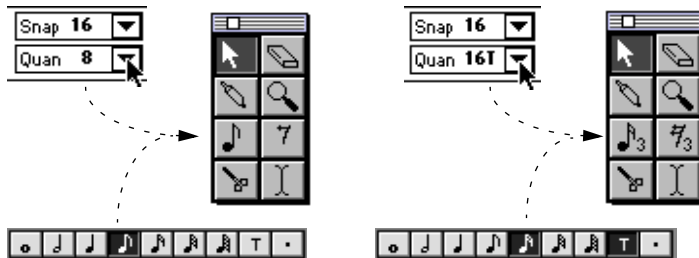
- Click anywhere in the Staff you want to activate.
- or
- Step to the Staff you want to activate, using the [↑] and [↓] keys on the computer keyboard.

Creating Notes and Rests

When you input music “by hand” in Score Edit, you can use the Note and Rest tools. The length of the note or rest to be input, is determined by the Quantize value. However, the easiest way to input notes, is to use the note symbols in the Toolbar:

- **To input a note, first click on the desired note value in the Toolbar (the Note tool is automatically selected), then click in the staff where you want the note.**

If you want to insert a triplet or dotted note, click on the “T” or “.” button when you select the note value.



When you change Quantize value, or click on a note button on the Toolbar, the shapes of the Note and Rest tools are changed.

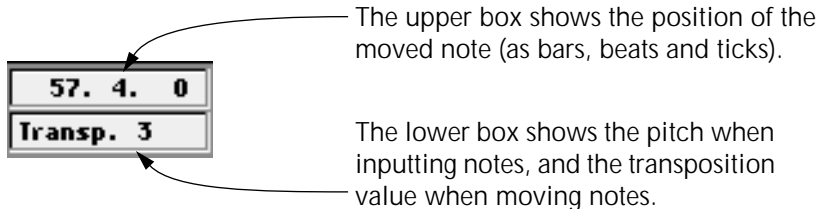
- **To input rests, select the Rest tool, then proceed as when inputting notes.** There is one big difference between inputting notes and rests:
-
- Rests are always inserted (as if Insert was activated, see [page 299](#)) into the music.
-

Manipulating Notes

There are a few special features for manipulating notes:

Moving and Transposing Notes

- **Use the two mouse boxes to determine where to place notes.**



When you move several notes, the upper mouse box shows the position of the note you clicked on when starting to drag.

- **If you hold down [Command] and transpose a note, it will only be transposed within the set key.**
If, for example, the key is C major (set in the Staff Settings dialog), you will only transpose to notes belonging to the C major scale.
- **Holding down [Shift] restricts movement to either up/down or left/right.**
If for example you want to transpose a note, select it, hold down [Shift] and move it vertically. This way, the note is not accidentally moved to another position in the bar.

Changing the Length of Notes

You may use the Note tool to change the lengths of notes in the score:

1. **Select the Note tool.**
2. **Click on the desired note value button on the Toolbar.**
3. **Hold down [Option] on the computer keyboard and click on the note you want to change.**

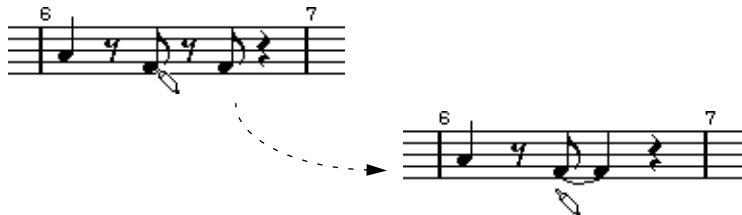
The note gets the selected note value.

-
- Please remember that the Display Quantize settings in the Staff Settings dialog affect how notes are displayed. If the above procedure doesn't give the expected result, check the Display Quantize settings.
-

Joining Notes

The Glue Tube tool allows you to join two or more notes of the same pitch.

- **Click on a note with the Glue Tube tool.**

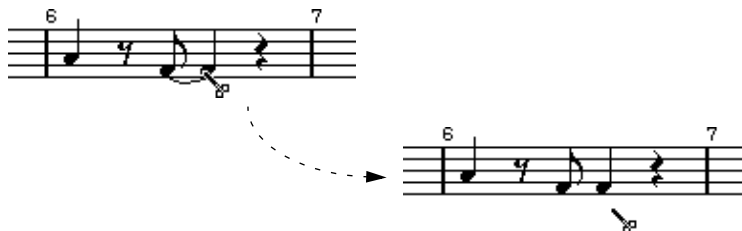


The note is joined to the next note with the same pitch.

Splitting Notes

The Scissors tool does the opposite of the Glue Tube; it splits two tied notes into separate notes:

- **Click on the second of two tied notes.**



The notes are split into two.

Enharmonic Shift

The buttons to the right on the toolbar are used to shift the display of selected notes so that for example an F# (F sharp) is instead shown as a Gb (G flat) and vice versa:

1. Use the arrow tool to select the note(s) you want to affect.
2. Click on one of the buttons to display the selected note(s) a certain way.



The middle button resets the notes to the original display. The other four options are double flats, flats, sharps and double sharps.

Flip Stems

By selecting this item from the pop-up Do menu, you change the stem direction of the selected note(s).

Deleting Notes and Rests

This is done with the Eraser tool, the Backspace key or the Delete item on the Do pop-up menu, as in the other editors.

-
- Deleting a note is the same as replacing it with a rest, while deleting a rest automatically moves the next note or rest to the position of the deleted rest.
-

Adding Text

Cubasis AV lets you enter text anywhere in the Score. This can be used for lyrics, comments or performance instructions. Proceed like this:

1. Select the “Text” Tool.



2. Click anywhere in the score.

A text input line dialog box appears.

3. Enter the text and press [Return] when you are ready.

The font, style and size of the text depends on the settings in the Text Settings dialog, reached from the Do pop-up menu.

Changing the Font and Size

If you wish to change the font and size for some text you already put in, proceed as follows:

1. Select the text by clicking on it with the Arrow tool.

You may select several lines of text in the Staff, by holding down [Shift] and clicking on them.

2. Select “Text settings...” from the Do pop-up menu.



3. Use the Font pop-up, the size setting and the style options in the dialog box that appears.

The fonts you find on the menu depend on what fonts you have installed in your computer.

4. Click “OK” to close the dialog box and give the selected text the settings you have chosen.

The font and size settings you just made will also apply to all the text you input from now on (until you change the settings, of course).

Editing text

To edit text, double click on it with the Arrow tool and enter new information on the input line, just as when you put in the text the first time.

Cutting and Pasting Text

Using the keyboard short-cuts (not the menus) you can Cut and Paste text. Select a “block” of text by clicking on it with the arrow tool, press [Command]-[X] or [Command]-[C] to Cut or Copy. Click for a new insertion point, and press [Command]-[V] to Paste.

Moving and Duplicating Text

Text “blocks” can be moved freely within the “page”, one at a time or together, just drag it/them to the new location.

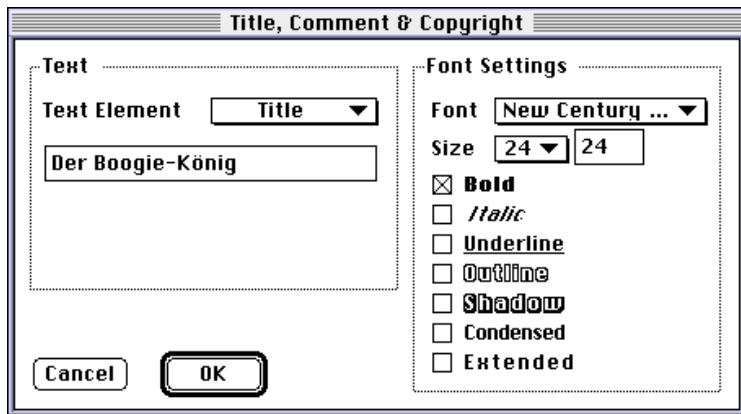
If you hold down [Option]when you drag you are making copies instead of just moving.

Deleting Text

Text “objects” are deleted just like notes, rests or other objects.

Title, Comment and Copyright

There are three standard text elements on the first page of your score, which you may enter in the dialog box that comes up when you select “Score Title...” from the Do pop-up menu.



1. Use the Text Element pop-up to select an element to edit.

“Title” is the title of the Score. It is printed at the top of the first page, and is always centered.

“Comment” is positioned just below the Title.

“Copyright” is positioned at the right side of the first page, just above the first system.

2. Use the pop-up menus and check boxes to the right, to select font, size and attributes for the selected element.
 3. Type in the text in the text box below the Text Element pop-up.
 4. Click OK.
-
- None of these elements are visible on-screen but will be printed out.
-

Printing

To print your score, proceed as follows:

1. **Make settings for the Text, Title, Comment and Copyright elements, as described on the previous pages.**
2. **Select Page Setup from the File menu.**
This opens the Page Setup dialog, which is a standard Macintosh dialog, with one exception (the Margins settings, described below).
3. **Choose paper size and direction, and make any other desired settings, just as when printing from a word processor or layout program.**

4. If you need to, change the size of the margins by setting new Left, Right, Top and Bottom values.

Please note that each printer has a minimum margin. To automatically set the values to this minimum, click on the Default button.

-
- If you set margins smaller than the Default values, everything on the page might not get printed!
-

5. Close the Page Setup dialog by clicking OK.

The Page Setup settings are included when you save the Song.

6. Select Print from the File menu or press [Command]-[P].

A standard Macintosh Print dialog opens. Its options depend on the type of printer you use (explained in the manual for your Macintosh or printer).

Normally you should be able to decide to print a number of copies, all pages, or just a specified range, etc.

7. Click Print.

Provided that you have your printer connected correctly, your score will now be printed.

8. Click OK.

-
- Note that printing is only available from Score Edit!
-

18

Step Recording

Introduction

Step Input is when you enter notes one at a time (or one chord at a time). This is useful when you know the part you want to record but are not able to play it exactly as you want it.

Preparations

1. **Create an empty Part, as a container for the notes you are about to Step Record.**

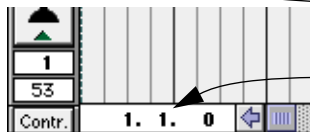
You can of course also use an existing Part.

2. **Open the Part in a MIDI editor of your choice.**

Below we will use Key Edit, but it doesn't matter which you select.

3. **Click on the Step button.**

This automatically activates the MIDI In icon and the Step Position box.



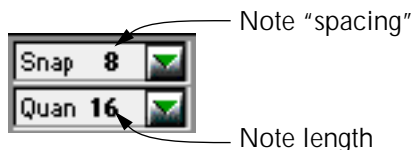
Click the Step button...

...the MIDI connector is automatically activated...

...and the Step Position box appears.

Determining Note Lengths and Positions

- To set the length of the notes you are about to input, adjust the editor's **Quantize value**.
If for example you set this to "16" all notes you input will be sixteenth notes.
- To set the "spacing" between the notes and chords, adjust the editor's **Snap value**.
If you set this to "8" all notes will appear on eighth note positions.



Setting the Position for the first note

To set the position where you want the first note to appear, adjust the regular Song Position (for example on the Transport Bar) and the Step Position is automatically set to the same value.

Selecting a Track for input

If you are editing several Tracks at the same time, you must decide which Track to enter notes into by making a Part/Track active. This is just as when recording from an editor, see [page 213](#).

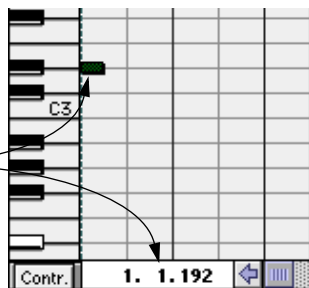
Entering notes and chords

1. Play one key or a chord.

If you just played one key it appears as soon as you release it. If you play a chord it appears when you release the last key. In either case, the velocity you played is recorded with the note.

No matter how long you hold down the key, the note will get the length set in the Quantize box.

When you release the key, the note appears and the Step Position box advances one step.



2. Enter the note(s) for the next position.

Adding Rests

To move one step without entering any notes, press the [Tab] key on the computer keyboard.

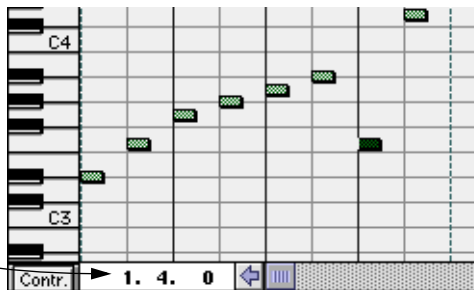
Changing note values and positions as you go along

- If you want to enter notes of another length, simply change the Quantize value at any point.
- If you want to input notes with a different “spacing” simply adjust the Snap value.
- If you want to move to a completely new position, change the Song Position or use Fast Forward or Rewind.

If you change the Song Position...



...the Step Position is set to the same value.



- To move one step back or forward in time, use the [←] and [→] keys. The Song Position Pointer shows you the current position.

If you make a mistake

If for example you entered a note with the wrong pitch or made a mistake when playing a chord, press [Backspace]. This deletes the last note/chord you entered, and moves the Step Position one step backwards. You can press this key repeatedly to “delete backwards”.

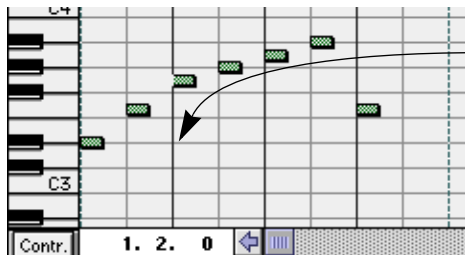
You can also use the tools and menu for editing (deleting, moving etc.).

Using the Insert button

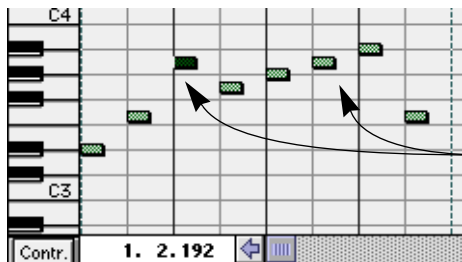


— The Insert button

If the Insert button on the Status Bar is activated, the notes are inserted rather than added. That is, any existing notes are moved to a later position to make room for the new notes.



— With Insert on, and the Step Position here...



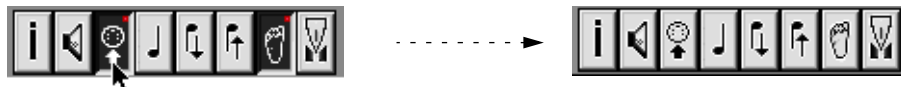
...the new note is inserted, and the following notes are "pushed forward".

Playing back

You can activate playback at any time and from any position, to hear what you have done. Please note, though, that moving the Song Position also moves the Step Position.

When you are finished

When you have entered all the notes you want, don't forget to deactivate step mode by clicking on the MIDI In button.



Click on the "MIDI connector"...

...and the Step button is automatically deactivated.

Entering notes from the computer keyboard

If you press [Insert] (on an extended computer keyboard), a note is inserted at the Step Position. It will take on the same default values as when you use Fill (see [page 221](#)).

Setting the pitch

To change the pitch of the next note you enter with the [Insert] key, press [\uparrow] (one semitone up) or [\downarrow] (one semitone down).

19

The Master Track

Using the Master Track

The Master Track is a special Track that contains time signature and tempo events only. Use this Track when you want to incorporate time signature and tempo *changes* in your music. If your Song does not contain any time signature or tempo changes, it is easier to set the tempo on the Transport Bar, as described in the chapter “Playback, Tempo and the Transport Bar”.

- To make Cubasis AV follow the tempo settings on the Master Track, click on the Master button on the Transport Bar so that it is activated.



Master activated

You may also press [M] on the computer keyboard to activate/deactivate the Master Track.

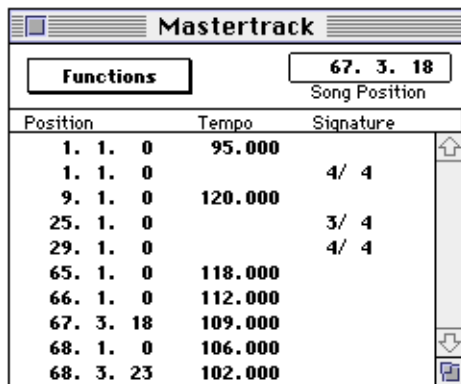
-
- Cubasis AV always follows the *Time Signature* changes set up on the Master Track. By activating and deactivating the Master Track, you decide if Cubasis AV is to follow the Master Track *tempo* settings or the tempo set on the Transport Bar.
-

-
- Please note that changing the tempo in Cubasis AV will not change the tempo within any recorded audio! The Master Track tempo only affects *when* each Audio Part starts, not the actual contents of the Part.
-

The Master Track Editor

There are two ways to *display* the Master Track and its entries:

- Select Master Track from the Edit menu.
- Press [Command]-[M] on the computer keyboard.



The screenshot shows a window titled "Mastertrack". At the top, there is a "Functions" button and a display showing "67. 3. 18" with the label "Song Position" below it. Below this is a table with three columns: "Position", "Tempo", and "Signature". The table contains several rows of data, with the last row highlighted. To the right of the table is a vertical scroll bar with up and down arrow buttons.

Position	Tempo	Signature
1. 1. 0	95.000	
1. 1. 0		4/ 4
9. 1. 0	120.000	
25. 1. 0		3/ 4
29. 1. 0		4/ 4
65. 1. 0	118.000	
66. 1. 0	112.000	
67. 3. 18	109.000	
68. 1. 0	106.000	
68. 3. 23	102.000	

The three columns in the list display each entry's position, tempo and time signature value.

The Tempo and Time Signature settings are shown in a list which can be scrolled using the scroll bar or the [↑] and [↓] keys on the computer keyboard. There are always two entries at the top of the list, the Master Track is never empty. These two are the initial tempo and time signature, positioned at 1. 1. 0.

Editing Events in the List

You change the Tempo and Time Signature values directly in the list, using the normal value editing procedures. Please note:

- **You cannot change the position of the Events in the list.**
Instead of moving an Event, use Cut and Paste, as described on [page 307](#).

Inserting Tempo or Time Signature Events

To insert new Events into the list, you use the Functions pop-up menu in the top left corner of the editor:

1. **Use the Song Position value box in the top right corner to set the position where you want to insert the Event.**
2. **Pull down the Functions pop-up menu and select “Insert Tempo” or “Insert Signature”.**
The new Event is added to the list. Time Signature Events are always positioned at the start of a bar.
3. **Edit the Event to give it the desired value, as described above.**

Deleting Events

1. Click on the Event you want to delete, to select it.
 - If you want to select a range of Events, click on the first Event, hold down [Shift] on the computer keyboard and click on the last Event.
All Events in between are selected.
 - If you want to select several Events, but not all in between, hold down [Command] and click on the Events.
Only the Events you click on are selected.
2. Select Delete from the Edit menu, or press [Backspace] on the computer keyboard.
The Event is removed from the Master Track.

Cut, Copy and Paste

You can use the Cut, Copy and Paste commands on the Edit menu (and their keyboard equivalents) on the Master Track Entries.

1. **Select one or more events and Cut or Copy them.**
2. **Set a new Position value using the Song Position value field.**
3. **Select Paste.**

The entries will get pasted in, beginning at the position set in the value field.

- **A Pasted entry will not replace an existing Entry at the same Position.**
- **A Time Signature entry can only be pasted in at the downbeat of a bar.**

Other Functions

On the Functions pop-up menu in the top left corner, there are some other functions for the Master Track:

Hide/Show Tempi and Time Signature

These two menu items allow you to Hide either all Tempi or all Time Signatures. When either is hidden, its menu item changes from "Hide" to "Show".

Clear Tempi

This function simply deletes all tempo entries but the first from the list.

Undo

Any deletion, copying or creation of events in the Master Track can be undone by selecting Undo from the Edit menu or by pressing [Command]-[Z] on the computer keyboard. Value changes cannot be undone.

Closing the Master Track Editor

Close the editor window by clicking its close box or pressing [Return] on the computer keyboard.

20

Movies

What is QuickTime?

QuickTime is an extension to the Macintosh operating system that allows you to play back movies in a window on your Macintosh.

What can I Do with QuickTime in Cubasis AV?

- **You can open any QuickTime movie, play it on your screen, synchronized with Cubasis AV's playback.**
- **You can export an audio track from a QuickTime movie, and import it into a Track in Cubasis AV.**

This allows you to edit the audio data there, cut out unwanted parts, add music, etc.

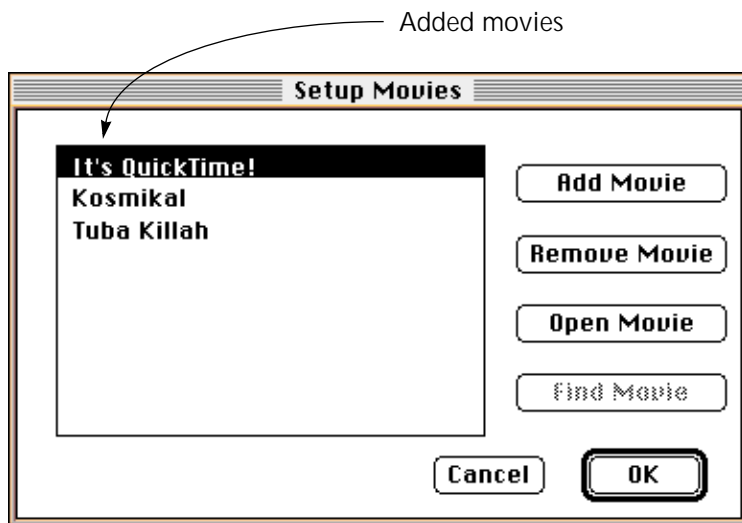
- **You can export audio that you have prepared in Cubasis AV and import it into a QuickTime movie, replacing the existing audio track.**

These features allow you to use Cubasis AV as an audio and music editing tool for your QuickTime movies.

Playing Movies in Sync with Cubasis AV

Setting Up and Loading Movies

1. **Select “Setup Movies” from the “Movies” submenu on the File menu.**
2. **Click the “Add Movie” button.**
The standard QuickTime file dialog appears. This shows a Preview still image of the movie to the left. If there is no Preview you can create one for the selected movie file, using the “Create” button.
3. **Locate the movie file, select it and click Open.**
The file is added to Cubasis AV’s movie list.
4. **If you like, Open more movies.**
Cubasis AV can have many movies loaded at the same time, and even play them all back simultaneously.



5. When you are done, close the "Setup Movies" dialog by clicking OK.

Saving the Movie List

When you save the Song, the list of movies used is saved with it. This does not mean that the actual movies are copied into the Song file, only that the program keeps track of *which* movies were used and *where* on your hard disk(s) they are.

Using Remove, Find and Open Movie

There are a number of additional options in the Setup Movies dialog:

Remove

- **To Remove a movie from the list, select it and click the Remove button.**

Find

If you use the Finder to move a movie file, for example from one hard disk to another, Cubasis AV won't be able to find the movie the next time you load the Song. If this happens, the title will be greyed out in the list.

- 1. To find the file, click the Find Movie button.**
- 2. Use the File dialog that appears to locate the file.**
- 3. Select the file and click Open.**
The file is now located and its title is again "black" in the list.

Open

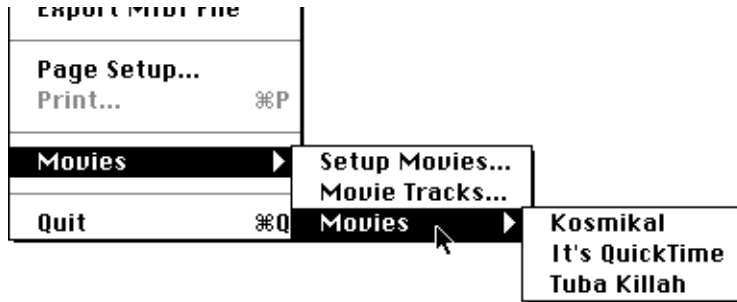
- **To Open the movie in a window, select it in the list and click Open Movie.**

This can also be done using the list on the Movies submenu, see below.

Opening and Closing Movie Windows

Open

On the “Movies” submenu on the File menu, you will find a Movies list containing the “added” movies.



The Movies sub-menu

- To open a movie in a window, select it from the sub-menu.

Close

- To close a movie window, click its close box.

If you have changed the Offset setting for the movie, the program asks you if you wish to save this. If you do, this setting will be saved into the movie file itself (the same dialog appears if you Quit the program with movie windows open).

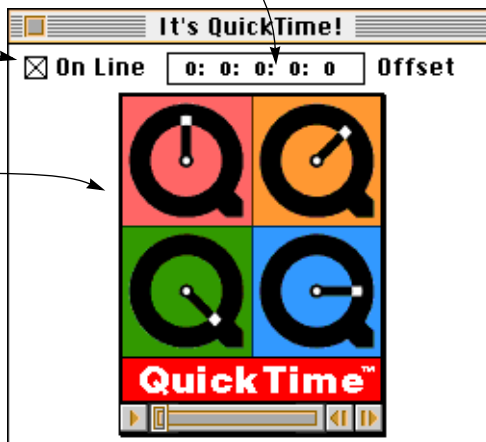
Playing Back

Use this to set where the movie should start in the song.

This turns "movie sync to Cubasis AV" on/off.

The actual movie.

The movie window's transport bar.



Offset

The movie window has a Start Time setting. This can be used to set a start point for the movie in the Song. The value is in time code (SMPTE) format; “hours:minutes:seconds:frames:subframes”.

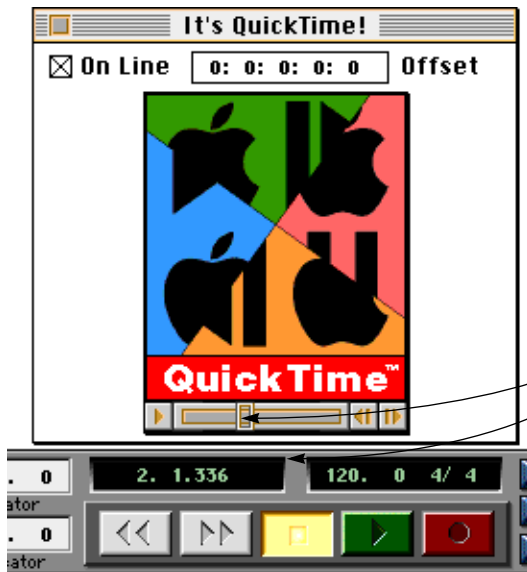
If for example you set this to “0:1:0:0:0”, the movie will start one minute in, from the beginning of the Song.

Playback

- When you activate playback in Cubasis AV, the movie plays back in sync.
 - To turn off synchronized playback, deactivate the “On Line” function in the movie window.
 - When you activate playback *in the movie window*, only the movie will play, regardless of the “On Line” setting.
-
- The audio in the movie is not played back when you play the movie from within Cubasis AV.
-

Positioning

The positions of Cubasis AV and the movie are completely linked. This means that when you fast forward, rewind, locate etc, the movie will be positioned accordingly. Also, when you perform the same operation in the movie window, Cubasis AV’s Song position will move with the movie’s.



When you "position"
Cubasis AV, the movie
"locates" to the same
position automatically.

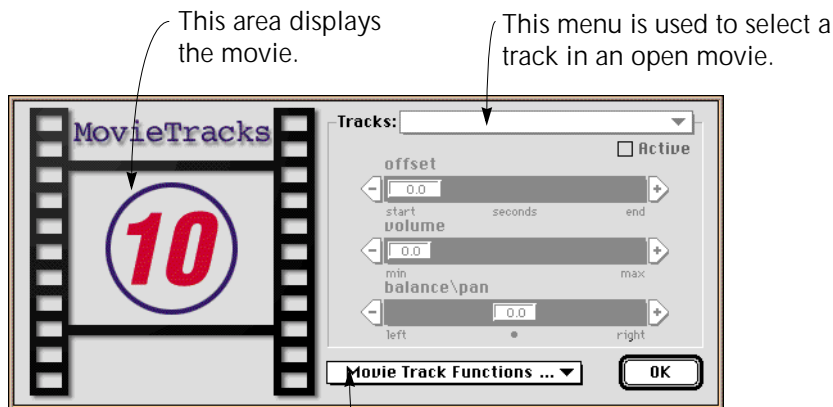
Importing and exporting audio tracks

Built into Cubasis AV is a QuickTime utility called MovieTracks that allows you to import and export audio data to and from QuickTime movies. We will first explain how this utility works, and then outline an example of its practical use.

Opening a movie in the MovieTracks window

1. Pull down the File menu and select "MovieTracks..." from the "Movies" submenu.

The following window appears.



2. Pull down the “MovieTrack Functions” pop-up and select Open Movie.
3. **Locate and open the movie.**
It appears in the left part of the window, from where you can play it back , like in any QuickTime window.

The Controls in the MovieTracks windows

Movie panel

On the left side of the window, a regular QuickTime panel allows you to play the movie.

Tracks pop-up

This is used to select one of the Tracks in the movie (the video track, the audio track, etc.). Whatever changes you make with switches and sliders will only affect the track selected here.

Active checkbox

This is used to turn on/off the selected track. When a track is deactivated, it will not play. When you save the movie you also have the option of excluding deactivated tracks, see below.

Sliders

These allow you to make adjustments to the track selected with the top (Tracks) pop-up. Any changes you make will only affect this track. For large changes, drag the handle with the value. For smaller changes, click the “+” or “-” buttons.

Name:	Description:
Offset	This allows you to make a track start later than the others. This is useful to for example make adjustments to a narration or music track that doesn't play "in sync" with the video.
Volume	This only applies to audio tracks, and allows you to adjust its playback level.
Balance/Pan	This only applies to audio tracks and allows you to adjust the stereo balance of an audio track (left/right).

MovieTrack Functions pop-up

This menu contains the following four options:

- **Open Movie**

This presents you with a regular QuickTime Open dialog, that allows you to open any QuickTime movie file you have on your disks.

- **Save Movie**

This allows you to save the movie, including the changes you have made in MovieTracks. See [page 326](#) in this chapter for details.

- **Import Audio**

This allows you to add an audio track to your movie. This can either be a separate audio file or you can extract the audio out of another movie. See [page 324](#) in this chapter for details.

- **Export Audio**

This allows you to export an audio track in a movie into a separate audio file. See [page 322](#) in this chapter for details.

- **Remove Track**

This removes the selected track from the movie, altogether.

Extracting Audio Data from Movies (Export Audio)

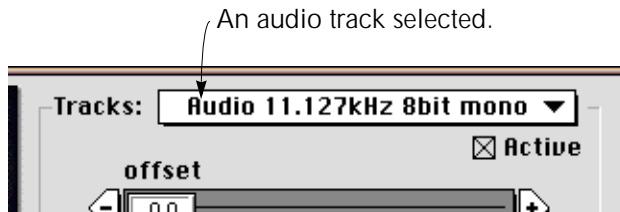
MovieTracks allows you to export any audio track in a QuickTime movie and convert it into a regular audio file that can be imported into Cubasis AV.

The file is saved in AIFF format (the standard audio file format on the Macintosh). Options in the dialog allows you to control the sample rate and bit resolution of the file. The main reason to change any of these values is if you want to use the files in a program that requires certain sample rates and resolutions (Cubasis AV does, see below).

Proceed as follows:

1. **Make sure the Tracks menu indicates that the correct audio track is selected.**

If, not, select the desired track from the top pop-up.



2. Pull down the "MovieTrack Functions" pop-up and select Export Audio.

3. Find a location for the file, type in a name and fill out the options, as follows:

Option:	Description:
Export in original format	This saves the file in AIFF format, without changing the sample rate or bit resolution.
Export and Convert to...	This saves the file and adapts its sample rate and resolution to the standard values for Cubasis AV. Use this option if you want to import the files into Cubasis AV.
Export as:	This allows you to select from a number of sample rates and from the two possible bit resolutions, using pop-ups.

4. Click Save.

The new file is created on your hard disk.

Adding Audio to Movies (Import Audio)

If you have prepared an audio file in Cubasis AV or other program you can import it into an existing movie.

- **The file must be in AIFF format (the standard audio file format on the Macintosh).**

- **Any sample rate is allowed.**

If you like, MovieTracks can convert the sample rate when importing it. See below.

- **The file can be in 8 or 16 bit format.**
- **The file will appear as a new track which gets added to the existing audio tracks in the movie file.**

Proceed as follows:

1. Pull down the “MovieTrack Functions” pop-up and select Import Audio.
2. Fill out the options, as follows:

Option:	Description:
Import in original format	This adds the file as a new track, without changing the sample rate or bit resolution.
Import and Convert to...	This adds the file as a new track and adapts the sample rate and bit resolution to the existing audio track(s) in the movie.
Import as:	This allows you to select from a number of sample rates and from the two possible bit resolutions, using pop-ups.

3. Locate the file and click Open.

The file gets added to the movie as a new track.

If required, you can now select the track and make adjustments to its volume, stereo balance and starting point, as described on [page 320](#) in this chapter.

Saving a Movie

When you save a movie, the following information is included:

- **Any track you have imported since you opened it.**
You can decide not to save deactivated tracks, see below.
- **Any setting changes you have made to the tracks (offset, volume etc.).**

Saving

1. Pull down the “MovieTrack Functions” pop-up and select Save Movie.
2. Find a location for the file, type in a name and fill out the options, as follows:

Option:	Description:
Save as self contained.../Save normally...	A self contained movie contains all the information needed for playing it back, in one file. A file with dependencies, on the other hand, might be “assembled” from other files. Normally, you would choose “self contained”. For more information about this, see the Apple QuickTime documentation.
Make PC compatible movie.	If this movie will ever be played back on a QuickTime equipped PC computer, make sure this check box is activated when you save.

Disable playback optimizations	When this is activated, editing the movie will be faster, but playback may be “jumper”. If this is the final edit of the movie, make sure this option is <i>deactivated</i> .
Only save active Tracks	When this is checked, only the tracks that are activated in the MovieTracks window, will be saved.

3. Click Save.

The new file is created on your hard disk.

Editing the audio for a movie - an example

To get an idea of how the various options in Cubasis AV can be used to edit and add audio to a movie, please read the following example:

Let's say you have recorded a movie with a video camera and transferred it to your Macintosh computer. This contains some dialogue recorded together with the pictures. You want to make some small adjustments to the existing audio (remove some parts, replace some bits, add some effects etc) and add some music. Proceed as follows:

1. **Open the movie in MovieTracks, and export the audio track, using the option that converts the sample rate to Cubasis AV's preferred rate.**
2. **Import the newly created audio file into a Track in Cubasis AV.**

3. Set up a movie playback window that plays back the video in sync with the Song.
4. Make the edits to the audio track (possibly adding new recordings), until the existing audio is playing back as you want it.
5. Create the music tracks.
6. Set up a final mix for all the audio (both the dialog and the music).
7. Use the Export Audio command in Cubasis AV to convert the entire Arrangement to a single audio file.
See the chapter ["Importing and Exporting Audio"](#) for more information about this feature.
8. Use the MovieTracks window to remove the existing audio track from the movie and replace it with the file you just created (by importing the new file).
9. Make any adjustments you find necessary.
10. Save the movie in self contained format.
It will now play back with new audio, complete with music and edited dialog.

21

File Handling

Saving

Which should I choose - Song or Arrangement?

When you save your music in Cubasis AV, there are three document formats you can use for saving your music: Song, Arrangement or MIDI File. You should only choose MIDI Files if you want your music (MIDI only - no audio) to be playable in other sequencers. If you want to save your music for further use in Cubasis AV, you should use either the Song or the Arrangement format:

Song

When you save a Song, the following is saved:

- All the Arrangements.
- All settings in dialogs, on the Transport Bar, etc.
- All Audio Parts and segments, and references to their respective audio files.
- The Pool.
- The settings in the Mixer windows.

Arrangement

When you save an Arrangement, the following is saved:

- All the things you see in one Arrange window; the Tracks, the Parts, the Inspector settings etc.

The audio files, however, are stored in the Pool, and the Pool is not part of the Arrangement. This means that if you only save an Arrangement, there will be no audio files for them to reference to! Therefore:

-
- When doing audio work with Cubasis AV we recommend that you always save complete Songs!
-

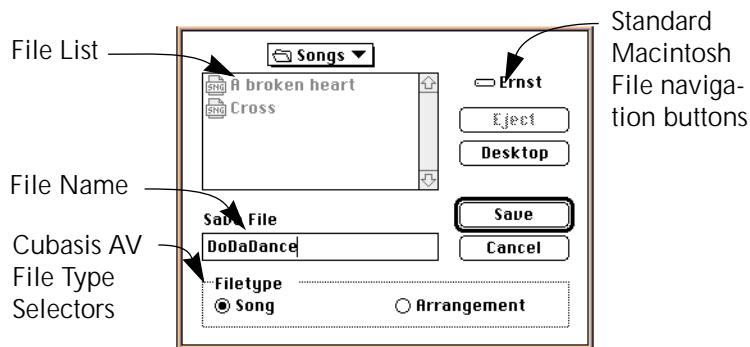
This table shows the advantages and disadvantages of the two formats:

File Format	Advantages	Disadvantages
Arrangement	<ul style="list-style-type: none">• Takes up little disk space.• Does not contain “unnecessary” settings if all you want to save is MIDI music.• Opening an Arrangement does not affect settings in dialog boxes and on menus, which, in some situations, is an advantage.• A saved Arrangement can be opened and incorporated into any other Song.	<ul style="list-style-type: none">• Does not contain any references to audio.• Does not contain a complete “snapshot” of the program’s “state”.
Song	<ul style="list-style-type: none">• Contains references to all audio information and data.• Contains more than one Arrangement.• Saves all the settings on all menus, in all dialog boxes etc.	<ul style="list-style-type: none">• Takes up more disk space than the Arrangement file format, even if you only have one Arrangement in the Song.

Performing the Save

1. Pull down the File Menu and select "Save As..."

The file dialog appears.



2. Use the standard Macintosh buttons and file list to find the location on your hard disk where you want to save the file.
3. Use the file type selectors to select a format, Song or Arrangement.
4. Type in a name for the file.
5. Click the Save button.

About the Autoload Song

Each time you launch Cubasis AV, a default Song is opened, called the Autoload Song. You can customize this default Song, simply by setting up the program as you want it (resizing and moving the Arrange window, configuring the Track list, changing the Double Click Opens setting, etc.) and saving the Song in the same folder as your Cubasis AV program, under the name “Autoload” (make sure you type the name exactly like that, but without the quotes of course!). Next time you launch Cubasis AV, the Song you saved will be loaded automatically.

Using Save

On the File menu you will find a menu item called “Save”.

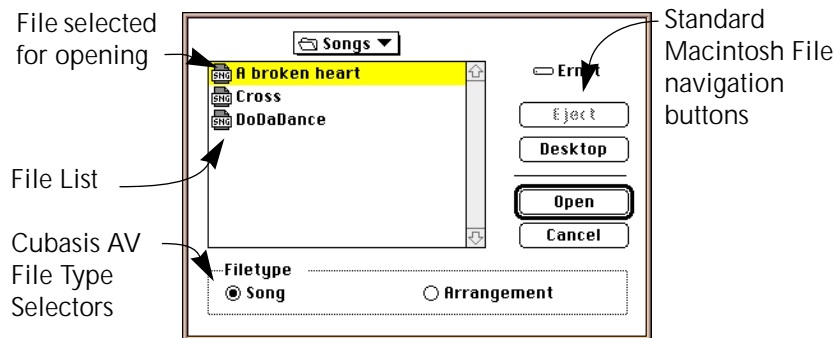
- If you have already saved your Song once (using “Save As...”) this menu command will save your Song without asking for a file name and location. The file you save now will simply overwrite the earlier version.
- If you have not yet saved your Song, selecting “Save” is the same as selecting “Save As...”.

The “Save” command can also be executed by pressing [Command]-[S] on the computer keyboard.

Opening

1. Select **Open...** from the File menu.

The Open dialog appears.



2. Use the file type selectors to select which type of file you want to open, **Song** or **Arrangement**.
3. Use the standard Macintosh buttons and file list to display the correct folder on your hard disk.
4. Click on the file in the file list.
The list will only show documents of the selected type.
5. Click **Open**.

About opening Songs

If the file is a Song, you will be prompted with a reminder that the Song you open will appear *instead* of the Song you have on screen now. If this is not what you want, Cancel and Save the existing Song first.

About opening Arrangements

If the file is an Arrangement, it will appear as a new window on screen, in addition to any Arrange windows already open.

Opening Documents from the Finder

Double clicking on a Song file in the Finder will launch Cubasis AV. However:

- *Audio files* should not be used to launch Cubasis AV, that is, don't double click on them in the Finder to start Cubasis AV.
- Double clicking on a *Pool document* in the Finder does not open the Song the Pool was last used in. Instead you get the Autoload Song.

Opening Songs made by other Steinberg programs

Cubasis AV can open Song files made in other Steinberg sequencer programs such as Cubase and Cubasis. However, there are some restrictions:

- **If the Song contains more than 16 MIDI Tracks and 8 Audio Tracks, the excess Tracks are removed.**

For Audio Tracks, this means that some audio may not be included. MIDI Parts on the excess Tracks are instead moved to the Track in Cubasis AV with the same MIDI Channel.

- **In more advanced Steinberg programs, there are additional settings and parameters, which are ignored when opening the file in Cubasis AV.**

Exporting an Arrangement as a MIDI File

You might want to export an Arrangement as a Standard MIDI File, so that it can be loaded into other computer programs or hardware sequencers, for example.

-
- A Standard MIDI File contains MIDI data only - no audio. Any audio in your Arrangement will automatically be excluded from the created MIDI file.
-

1. Mute all the MIDI Tracks you *don't* want included in the MIDI File.

2. Pull down the File menu and select "Export MIDI File".

A file dialog appears.

3. Select a name and location for the file.

If you plan on playing the MIDI file on another platform, such as a PC, you should name it "XXX.MID", where XXX is a name with up to eight characters.

4. Click Save.



A MIDI File created by Cubasis AV.

- **Cubasis AV normally saves MIDI files in format 1.**

However, if you Export a MIDI File with only one Track unmuted, a MIDI File of type 0 is created.

Importing a MIDI File

You can import Standard MIDI files into Cubasis AV, either into the currently selected Arrangement or into a new Arrangement of its own:

- 1. If you want to include the MIDI file in an existing Arrangement, select this Arrangement and move the Left Locator to where you want the MIDI file to start.**
- 2. Pull down the File menu and select “Import MIDI File”.**
A dialog box appears, asking if you want the file to appear in a new Arrange window or if you want to merge the MIDI File into the current Arrangement.
- 3. Select one of the options.**
The MIDI file is imported. The data is automatically split up into shorter segments (Parts) to make it easier to edit the music in the Arrange window.

About Audio Files

Audio File Formats

All audio files created by Cubasis AV are AIFF files with 16 bit resolution.

However, using the Import Audio command in the Pool, you can load audio files in the formats Sound Designer II or AIFF. When you do this, the program expects the imported file to have the sample rate 44.1 kHz. If the audio has another sample rate, it will not play back normally.

Backing Up

Needless to say, it is essential that you back up your audio data regularly, preferably on to another device.

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Menu and Dialog Reference

The Apple Menu

The Apple Menu (the menu under the apple icon in the top left corner of the screen) contains one item related to Cubasis AV:

About Cubasis AV...

This opens the About Cubasis AV dialog. The dialog contains:

- The version of the program (displayed in the top left corner).
- The Available Memory figure (giving you an approximate idea of how much memory is available for recording new MIDI music).
- A list of people involved in making the program.

To close the About Cubasis AV dialog, click on it or press [Return] on the computer keyboard.

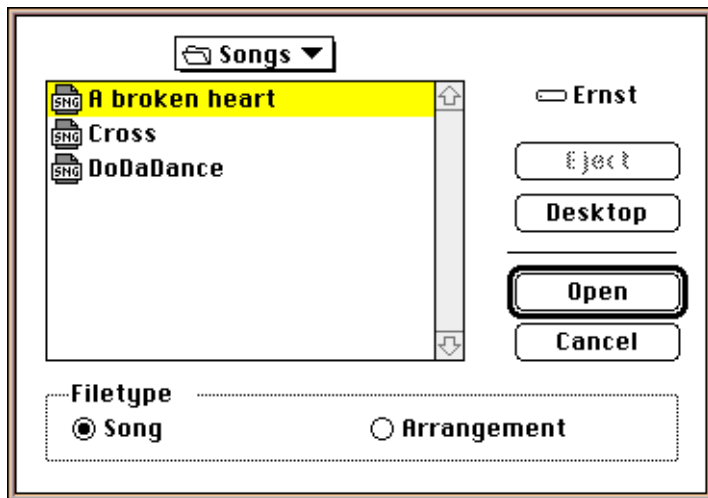
The File Menu

New

Selecting this menu item, or pressing [Command]-[N], creates a new Arrange window, called Untitled. You can change this name by double clicking on it in the title bar of the window.

-
- The maximum number of open Arrange windows at any time depends on memory, but the upper limit is always sixteen.
-

Open...



This item brings up a dialog, which is used to open Cubasis AV files. With the Filetype radio buttons, you select which type of files should be displayed in the file selector box, Songs or Arrangements:

Song



A Song document in the Finder

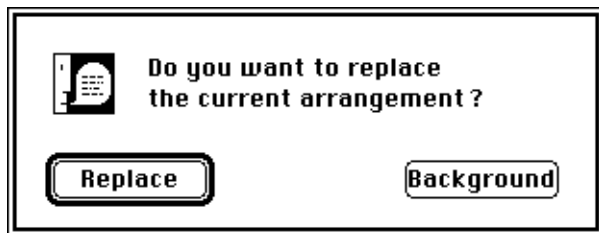
This option opens up a complete Song including all information and settings.

Arrangement



An Arrangement document in the Finder

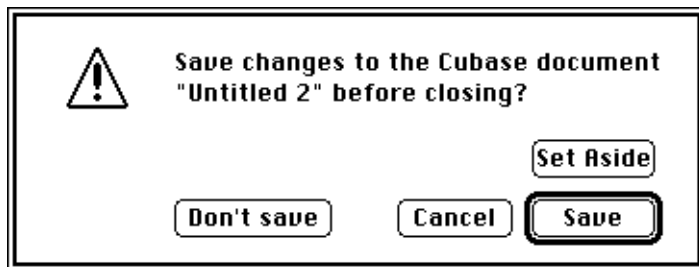
Opens up an Arrange window including all Arrangement-specific settings. If you hold down [Command] while clicking on Open, this dialog box appears:



Regardless of whether you now choose to replace the existing Arrangement or put the new Arrangement in the background, you can do this without interrupting the music. This makes it easy to load new music while playing, e.g. in a live situation.

Close

Closes the Active window. If the window is an Arrangement, you get this dialog:

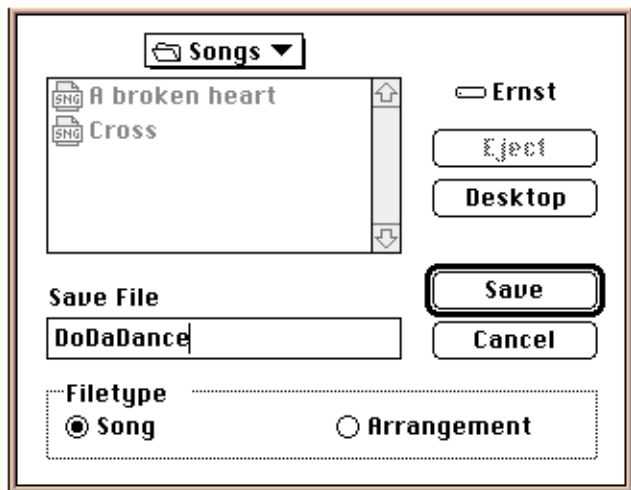


Option	Description
Set Aside	The window is closed, but the Arrangement is still kept in memory and still exists on the Windows menu. The window can be opened again by selecting it from there.
Save	The Arrangement is saved, and the window is closed. If the Arrangement hasn't already been saved, you are asked to give it a name.
Don't Save	The Arrangement is closed and erased from memory. If you want to open it again some other time, save it to disk before closing.
Cancel	Aborts the entire operation.

Save

This saves any changes made to the Song since you last saved. If the Song hasn't been saved before, the Save dialog comes up asking you to specify a name and "location" for the Song.

Save as...



The Save as... item brings up a dialog box that allows you to Save to disk and specify a name and location for the file.

Which file type (Song or Arrangement) you will save is determined by the Filetype radio buttons:

Song

This saves the whole Song, which means a number of things, some of which can also be saved individually:

- All Arrange windows.
- The Pool, including all audio references.
- All preferences and settings.

Arrangement

This saves the active Arrange window. If you give the Arrangement a new name when saving, the name of the Arrange window in Cubasis AV will be changed too. The Arrangement contains:

- The contents of the Arrange window.
- The tempo setting on the Transport bar.
- The Mastertrack contents and its on/off status.
- The Solo switch setting.

The Arrangement does not contain any audio-related data.

Revert To Saved

This command restores the Song to the last saved version. Any changes you made since you last saved are lost. You can use this command as a way of Undoing many changes at the same time. Save your Song, experiment, and if you don't like what you got, Revert to the last saved version.

Import Audio File

Imports an audio file (of format AIFF or Sound Designer II) into the Arrange window. See [page 197](#):

Export Audio File

Makes a mixdown of all audio between the Left and Right Locators, including all unmuted Audio Tracks, fades, effects and other mixer settings. A new audio file is created, which can later be re-imported into the Arrangement. See [page 199](#).

Import MIDI File



A MIDI file document in the Finder

Opens a standard MIDI file. This is the main way to incorporate music made on other sequencers. When you select this item, you are asked if you want to incorporate the MIDI file into the current Arrangement (starting at the Left Locator) or put it in a new Arrange window of its own.

- **Cubasis AV recognizes Standard MIDI files if they have the File Type “Midi” or the extension “.MID”.**
- **The program can read MIDI files in formats 0 or 1.**
- **The only non-MIDI Events that are imported are the time signatures and tempi on the Master Track and the Track names.**

Export MIDI File

This option allows you to export the MIDI music (not the audio) in the current Arrangement as a Standard MIDI file. Cubasis AV normally saves MIDI files in format 1, but if only one unmuted Track exists, a file of type 0 is created. Due to the way MIDI files are defined, all Parts on each Track will be joined together into one long “Part” in the saved file.

- **Muted Tracks are not included.**
- **The only non-MIDI Events that are saved are the time signatures and tempi on the Master Track and the Track names (names are saved as text).**

Movies submenu

This submenu contains all Movie-related items, as described in the [Movies](#) chapter. The three items on the submenu are:

Setup Movies...

This menu option lets you make up a list of QuickTime movies to use with your Song (described in the [Movies](#) chapter).

MovieTracks

This menu item opens up the MovieTracks window. This window allows you to export and import audio tracks to and from QuickTime movies, as described in the [Movies](#) chapter.

Movies

This menu item opens a sub-menu with a list of the movies that have been added to the song. If you select one of these movies, a window will be opened to show the selected movie. See the [Movies](#) chapter for more details.

Page Setup

Opens a standard Page Setup dialog. Use this for setting page size, margins, etc. when printing scores (see [page 291](#)).

Print (only available in Score Edit)

Select this to print scores (see [page 291](#)).

Quit

Selecting this item (or pressing [Command]-[Q]) quits the program. A dialog box allows you to Save before quitting.

-
- If you quit Cubasis AV without saving, a dialog box will appear, asking you if you want to delete all audio files created since you last saved the Song. If you click Yes, these files will be permanently removed from the hard disk.
-

The Edit Menu

Undo

You can Undo your *last* action by selecting this menu item or by pressing [Command]-[Z].

- **Most of the time, the menu item also gives you a clue about what will be undone.**

If for example it says “Undo Delete”, the last thing you did was deleting something.

- **If you wish to “Undo the Undo”, this is possible since after an Undo, this menu command changes to “Redo”.**
- **If the menu item is greyed out, nothing can be undone.**

The following operations can be undone:

Arrange window:

Everything can be undone (even a recording) except:

- Import Audio File on the File menu.
- Erasing audio files permanently from the hard disk, using [Command]-[Backspace].

Pool

Everything can be undone, except the following operations:

- Export Segments.
- Import Audio File.
- Save Pool.
- Load Pool.
- Erasing audio files permanently from the hard disk, using [Command]-[Backspace].

Master Track:

- All Event operations such as Insert, Delete, Cut, Paste and so on, can be undone, but not the actual editing of tempi and time signatures.

Cut

This takes the selected item(s), removes them from the window they were in and puts them in an invisible “storage bin” called the Clipboard. You can later Paste them into the same window or another of the same type (i.e. Parts can be Pasted into Arrange windows, MIDI Events can be Pasted into MIDI Editors).

Copy

This takes the selected item(s) (Parts, notes or other MIDI Events, etc.) and copies them to an invisible “storage bin” called the Clipboard. You can later Paste them into the same window or another of the same type (i.e. Parts can be Pasted into Arrange windows, MIDI Events can be Pasted into MIDI Editors).

Paste

If you have used Cut or Copy to put something on the Clipboard, you can use this command to put that something back into the active window. You can Paste as many times as you want from the Clipboard.

Objects are always Pasted in at the current Song Position. Parts can be Pasted into Arrange windows only, MIDI Events can be Pasted into MIDI Editors only.

Delete

This simply deletes the selected object(s), just like pressing [Backspace] on the computer keyboard. Depending on what is selected, the menu item may be called “Delete Part”, “Delete Entry”, etc. to help you avoid deleting the wrong objects.

Select All

This command selects all objects in the window (Parts in the Arrange window etc.). Select All can be performed by pressing [Command]-[A] on the computer keyboard.

Edit

Selecting this (or pressing [Command]-[E]) opens the Key Edit window for the selected MIDI Part(s) or MIDI Track. See [Key Edit](#).

List

Selecting this (or pressing [Command]-[G]) opens the List Edit window for the selected MIDI Part(s) or MIDI Track. In List Edit, you can only edit Parts on the same Track. See [List Edit](#).

Score

Selecting this (or pressing [Command]-[R]) opens the Score Edit window for the selected MIDI Part(s) or MIDI Track. See [Score Edit](#).

Mastertrack

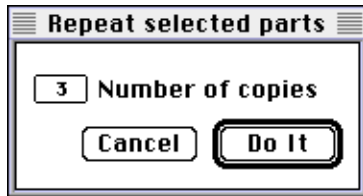
Opens the Master Track editor. This can also be done by pressing [Command]-[M] on the computer keyboard.

The Parts Menu

Create Part

This creates a new empty Part on the active Track, beginning at the Left Locator and ending at the Right Locator. This can also be done by double clicking in the Part Display or pressing [Command]-[P] on the computer keyboard.

Repeat...



This function repeats the selected Parts and lines up the copies after the original(s). Selecting the menu item (or pressing [Command]-[K] on the computer keyboard) brings up a dialog box in which you can specify the number of copies.

Cut Notes

This command makes sure all notes in a Part end where the Part ends and no later. It is possible to get notes which “stick out” outside the Part, for example after using the Scissors or Pencil tools, and this isn't always desired. To change this situation, select the Parts and use Cut Notes.

The Functions Menu

Over Quantize

This type of Quantizing moves the notes to the closest Quantize value, without changing their lengths. It also tries to detect chords, and keep them together when quantizing.

- **Over Quantize can also be performed by pressing [Q] on the computer keyboard.**

Undo Quantize

Quantizing is not permanent. You can at any time (even after Saving) select Undo Quantize (or press [U] on the computer keyboard) to restore any selection of Events to their original recorded timing.

Delete Doubles

This command erases all double notes. Such doubles most often occur when you record in Cycle mode and record over more than one lap. Double notes can sound like short delays, flanger effects, or even just as one loud note.

- **Notes are considered to be “doubled” when they have the same note number (the same pitch) and have identical start points.**

Delete Cont. Data

This command erases all Continuous data, or more specifically, the following:

- Controllers.
- Pitch Bend.
- Aftertouch.
- Poly Pressure.

The Options Menu

Follow Song

When this is activated, the Part Display in the Arrange window “moves” (or “scrolls”) with the Song when you play back, rewind, record and so on.

- **You may turn Follow Song on and off by pressing [F] on the computer keyboard.**

Reset On Stop

When this is activated, the following controllers are “reset” each time you stop Cubasis AV’s playback:

- Pitch Bend.
- Modulation.
- Aftertouch.

The standard MIDI messages “All Notes Off” and “Reset all Controllers” are also sent out.

MIDI Thru

By activating/deactivating this option you decide if Cubasis AV is to echo incoming MIDI data. In most cases this should be activated (ticked).

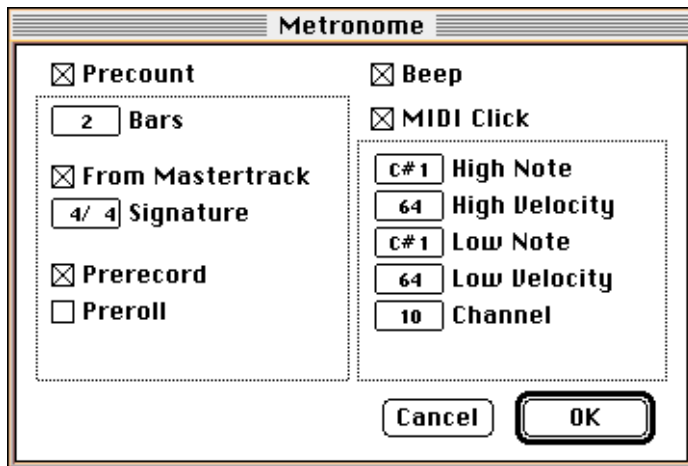
Play in Background

When this item is ticked, Cubasis AV will keep playing, even if you switch over to another program. However, it will then also keep control of the serial port you are using (Modem/Printer) so you can't use another *MIDI* program at the same time.

Double Click Opens

Opens a submenu, allowing you to select which editor should be opened when you double click on a MIDI Part: Key, List or Score Edit.

Metronome...



The metronome dialog is used for three things:

- To set up how the program should behave when you activate recording (Precount, Prerecord and Preroll).
- To set up the Beep metronome (that uses the computer's sound).
- To set up the MIDI Metronome (that plays a click on one of your MIDI instruments).

Precount

- By enabling/disabling the Precount you can decide if you want a count-in at all when you activate recording.
- By changing the Bars value you can set how long you want the Precount to be.
- If you disable the “From Mastertrack” function you can change the Time Signature for the count-in.

Prerecord

If this function is activated, Cubasis AV will record during the Precount (count-in). Even if you don't hear your other Tracks during the Precount, you can for example add a note at the upbeat, just before playback starts.

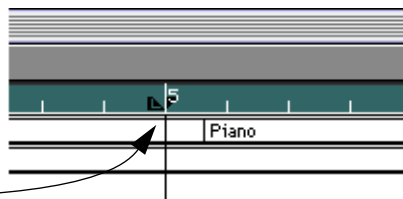
-
- You cannot record before song position 1.1.0 (the beginning of the song).
-

Preroll

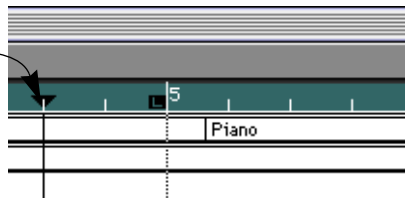
When this is activated, the Precount (count-in) is not silent, instead you will hear the last bar(s) before the Left Locator. How many bars you hear depends on the Bars setting described above.

If you use the Preroll feature, you might want Prerecord activated at the same time, so that you can record during the Preroll.

When you activate recording from the Left Locator, with Preroll activated...



... the Song Position jumps back a number of bars and recording is activated.



The remaining options in the Metronome dialog are for setting up how the metronome should sound.

Beep

This allows you to turn the beep from the computer's speaker on and off.

MIDI Click

When this is activated, you will get a Metronome via MIDI (if Click is activated on the Transport Bar). Use the settings below to route the metronome to for example a bass drum or a sidestick sample from a drum machine or similar.

Use this:**To set:**

High Note

The MIDI note number for the downbeats.

High Velocity

The velocity value for the downbeats.

Low Note

The MIDI note number for all other Metronome "clicks".

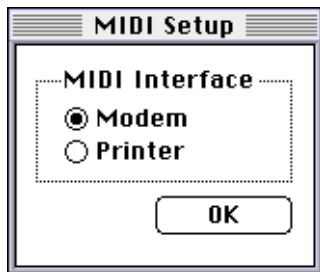
Low Velocity

The velocity value for all other Metronome "clicks".

Channel:

The MIDI Channel for all Metronome "clicks".

MIDI Interface



This allows you to select to which computer port your MIDI interface is connected.

-
- Cubasis AV expects the interface to operate at a clock rate of 1 MHz. If your interface doesn't have a clock rate switch, you do not need to worry about this. If it does, set it to 1 MHz.
-

The Windows Menu

Hide/Show Transport

This allows you to switch between hiding and showing the entire Transport Bar.

- **You can use the computer keyboard to activate the functions on the Transport Bar, even though it is hidden. See [page 374](#).**

The Arrangement list

The lower part of the Windows menu contains a list of all Arrangements in the Song.

- **Selecting one of the Arrangements on the list, brings the corresponding Arrange window to the front.**

This is crucial if you have used the Set Aside command to hide Arrangements (see [page 138](#)).

Tools

Opens the Toolbox for the active window.

23

Keyboard Commands

What This Chapter Contains

The following is a list of the keyboard short-cuts for many of Cubasis AV's functions.

Numeric Keypad

Key Command	Function:
[*]	Activate recording
[Enter]	Start/Continue
[0] or [spacebar]	1st time – Stop 2nd time – Go to Left Locator/ 1. 1. 0 3rd time – Go to 1. 1. 0
[delete/numlock]	Rewind (top left key)
[=]	Fast Forward
[+]	Increase Tempo
[-]	Decrease Tempo
[1]	Go to Left Locator
[2]	Go to Right Locator
[9]	Go to last Stop Position

Key Command	Function:
[Shift] + [1]	Store Song Position as Left Locator
[Shift] + [2]	Store Song Position as Right Locator
[3] to [8]	Go to Cue Point 3 to 8
[Shift] + [3] to [8]	Store Song Position as Cue Point 3 to 8
[/]	Cycle On/Off

Typewriter Keyboard

The various key commands are grouped after their contexts, to make it easier to find what you're looking for:

File Handling and General Procedures

Key Command	Function
[Command]-[O]	Open
[Command]-[S]	Save
[Command]-[Z]	Undo
[Command]-[X]	Cut
[Command]-[C]	Copy
[Command]-[V]	Paste
[Command]-[Q]	Quit

Window Handling

[Command]-[N]	New Arrange window
[Command]-[W]	Close active window
[Return]	Close box or "click button with heavy border" in Dialog Boxes
[Esc]	Close and Cancel in Dialog Boxes
[Command]-[E]	Open Key Edit window
[Command]-[G]	Open List Edit window
[Command]-[R]	Open Score Edit window
[G]	Decrease horizontal magnification
[H]	Increase horizontal magnification
[Shift]-[G]	Decrease vertical magnification
[Shift]-[H]	Increase vertical magnification

Transport Bar functions

Key Command	Function
[P]	Set Position
[L]	Set Left Locator
[R]	Set Right Locator
[C]	Click On/Off
[M]	Master Track On/Off
[S]	Solo On/Off
[F]	Follow Song On/Off

Arrange Window Selection and Editing

Key Command	Function
[Command]-[A]	Select All
[→]	Select Next Part
[←]	Select Previous Part
[↑]	Go one Track up
[↓]	Go one Track down
[Backspace]	Delete Selection
[Command]-[Backspace]	Permanently delete the audio file(s) in the selected Parts from the hard disk.
[Q]	Over-Quantize
[U]	Undo Quantize
[1]-[7]	Set Quantize value
[T]	Set Quantize value to triplets
[.]	Set Quantize value to dotted

Key Command	Function
[Option]-[I]	Open/Close Inspector
[Command]-[M]	Display Master Track
[Command]-[P]	Create Part
[Command]-[K]	Repeat

Pool functions

Key Command	Function
[Option]-[D]	Duplicate Segment
[Command]-[Backspace]	Permanently delete the selected audio file from the hard disk.

All MIDI Editor windows

Key Command	Function
[Return]	Keep (Close editor, keeping changes)
[Esc]	Cancel (Close editor, discarding changes)
[Insert]	Insert Event
[Tab]	Move one Snap in Step Edit
[Option]-[O]	Loop On/Off
[Option]-[L]	Input Left Loop boundary
[Option]-[R]	Input Right Loop boundary
[Option]-[I]	Info On/Off
[A]	Edit Solo On/Off

Key Edit only

Key Command	Function
[Caps Lock]	Restrict Pen to length changes only
[→]	Next Note
[←]	Previous Note

List Edit only

Key Command	Function
[↑]	Previous Event
[↓]	Next Event

Score Edit only

Key Command	Function
[→]	Next Note
[←]	Previous Note
[↓]	Next Staff
[↑]	Previous Staff
[Command]-[P]	Print Score

- In all MIDI Editors, the arrow keys can be used in combination with the [Shift] key to select several notes.

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