sYbil™

sYbil

Music Software for Real-Time Performance

from

Scorpion Systems Group

Version 2.0

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Introduction

About sYbil

Welcome to the world of sYbil! You are about to embark on a musical experience very different than any you've ever encountered. As you progress, you may find it difficult to explain to others exactly what it is you are doing (it certainly hasn't been easy for us), or how to define exactly what sYbil is. Perhaps it is easiest to begin by defining sYbil in terms of what she isn't!

sYbil is NOT:

1) A sequencer.
2) An algorithmic composer.
3) A "right note" generator.
4) A substitute for musical knowledge, technique, or talent.
5) A MIDI "hacker's toolbox".
6) A MIDI "player piano".

Having said this, you will be left with the difficult task of saying precisely what sYbil is. Well, much like the woman with the identity problem she has many different faces. Maybe the best way for you to understand sYbil is to understand why we developed her. In a nutshell, we felt that too many musicians were forced to make a choice - between being "players", or being "MIDI'd".

It seemed that too many musicians we knew were setting aside their instrumental skills and foregoing performance so that they could be "state of the art" MIDI musicians. Many of these musicians had spent their entire careers playing, and were suddenly spending all of their time sequencing, using drum machines, and working alone in studios, layering parts one voice at a time. It's not that there's anything wrong with any of these activities, but they don't require the quick thinking or real time "edge" that a player spends years developing.

We felt that there must be a way for musicians to harness the power MIDI offers without sacrificing or watering down their skills. We developed sYbil with these musicians in mind.

sYbil is about music, not technology! The underlying question that sYbil asks is "What do you want to play?" - not "Do you understand hexadecimal arithmetic?" or "Have you read the latest revision to the MIDI spec?". With sYbil, we have provided an environment which will allow you to use MIDI technology to play the music you want to play, with a degree of intensity and spontaneity that is missing from much of today's music.

We have built many features into sYbil designed to open MIDI technology up to non-keyboard players. It seemed to us that previously only keyboard players could take advantage of MIDI technology in real time, as they could keep the music going with one hand while turning a knob or pushing a button with the other.

sYbil offers this same flexibility to drummers, guitarists, and horn players, while still offering keyboard players some truly unique features not found anywhere else.

Since the release of the first version of sYbil, we've heard from people all over the world who've offered praise, criticism, and suggestions for future releases. We appreciate all three types of input, but many of the suggestions are along the lines of "why not have sYbil send out a SYS EX message that will turn on my record player and cue it up to the third song on side two"?

We have made some deliberate choices in the design of this product, and the underlying criteria for these choices have been "Is it musical?" and "Is it real time?". We've chosen to avoid features that let the instrument "play itself" or do much of anything without specific input from you.

You've probably noticed that we still haven't said exactly what sYbil is. In fact, sYbil is largely defined by you! In many ways, she is a blank slate which you can use to express and expand upon your musical ideas.

Undoubtedly, you will find your own unique approach to sYbil. We look forward to hearing about new and interesting ways you may be using the program. We hope you have as much fun using the program as we did creating it!

sYbil Summarized

sYbil allows you to expand your musical capabilities by functioning on several levels simultaneously. The following is a brief description of how sYbil works:

1. sYbil allows you to define a 16-note (or 2 8-note) region(s) in which each input note from either your MIDI controller or computer keyboard can send out up to 4 MIDI notes. Each output note can have its own MIDI channel, volume, and gate time settings. The "sYbil region" can be set up anywhere you choose on your instrument, according to your own playing style and technique.

2. You can manipulate the characteristics of the output notes by installing TOGGLES on the input notes. These toggles are activated in real time from your controller, and do not require that you stop the flow of the music to use them. In fact, they become part of the music as they allow you to do things like transpose, sustain or truncate notes, or send up to 4 sets of 16 program changes.

3. New IDENTITY MAPS (the sets of 16 4-note chords) can be brought up in real time with a toggle, enabling you to instantaneously change the harmonic and timbral "palette" you are using.

4. New PROGRAM CHANGE MAPS (sets of 16 program changes that are sent simultaneously) can be sent in real time with a toggle, enabling you to instantaneously change the instrumentation of your "ensemble".

5. A VELOCITY CROSS-SWITCH option allows you to access an additional identity map when you send an input note with a velocity greater than some pre-determined threshold.

6. The input notes on your controller which lie outside sYbil's 16-note range are treated as MIDI Thru, so that you can use the remainder of your controller in the conventional way.

7. Each "palette" (i.e. a collection of identity maps, toggles, and options which comprise a performance piece) can be saved to disk, and recalled quickly for future performances.

8. "Hang" a chord while playing an intricate passage, or "comp" behind your own solos.

9. Open as many of sYbil's functional windows as you like, and configure the display so that the information that YOU need is at your disposal.

10. PLAY mode activates toggles and options, and allows you to play from either your MIDI controller or the Macintosh keyboard. While in PLAY mode, the status of dynamic attributes such as the CHAIN and PROGRAM CHANGE toggles is displayed onscreen.

11. Exchange sYbil maps with other Macintosh users, as well as musicians using Atari, IBM compatible, and Yamaha C1 computers by using the IMPORT/EXPORT function

Getting Started

Before You Begin...

Be sure to fill out the registration card which was enclosed with the sYbil program disk and this manual. Updates to the program and other useful information will be sent to registered users only. Please note that sYbil is copy protected, and you should carefully follow the installation and backup procedures described in this section.

System Requirements and Setup

A basic sYbil system for the Macintosh requires a computer, a controller, and a sound module (it is also possible to use sYbil without a controller by playing from your computer keyboard). sYbil will run on a Mac Plus or SE, as well as later more powerful units. You will also need a MIDI interface, and at least a single floppy disk drive or hard disk.

Virtually any MIDI controller can be used to send input data to sYbil. However, to take full advantage of all sYbil features, it should be velocity sensitive. Your sound module should be multi-timbral and multi-channel, i.e. it should be able to receive incoming data on more than 1 channel at a time (an ideal unit would be able to receive on all 16 channels simultaneously).

Some low end units are only capable of receiving MIDI data on one channel, and will not work well with sYbil. It is also possible, particularly for keyboardists, to use an integrated controller/synthesizer with sYbil.

Setting up a MIDI system to work with sYbil on a Macintosh simply requires that you:

1. Connect your interface to the COM and/or PRINTER port as specified in your interface manual.

2. Connect the MIDI OUT jack on your controller to the MIDI IN jack on your interface with a standard (5 pin DIN) MIDI cable.

3. Connect the MIDI OUT jack on your interface to the MIDI IN jack on your sound module with a standard MIDI cable.

Installing the Software

Important Note: sYbil is copy protected, and any attempt to illegally duplicate the program may damage your program diskette. Be sure to install the software according to the following procedure.

Before installing sYbil, uninstall any virus detection programs which are active. These programs can prevent successful installation of sYbil and damage your master diskette. Once you have installed sYbil, you may reinstall your virus detection programs.

sYbil allows you to install two copies of the program onto other floppy or hard disks. Follow the installation procedure carefully. Once installed, keep the master program diskette in a safe place to avoid possible damage.

Floppy Disk Installation:

1. Place the sYbil master diskette in the floppy drive.
2. Double click on the sYbil diskette icon to view the contents of the diskette.
3. Double click on the FD Install (floppy disk) icon. The installation screen will appear.
4. Click on the **Install** button in the lower left hand corner. A dialog box indicates when the installation is done Upon completion, quit the install program.
5. A folder entitled **sYbil f** now resides on your floppy diskette. This folder contains your working version of sYbil.

Hard Disk Installation

Note: You should only install one copy of sYbil on your hard disk at one time.

1. Place the sYbil master diskette in the floppy drive.
2. Double click on the sYbil diskette icon to view the contents of the diskette.
3. Double click on the HD Install (hard disk) icon. The installation screen will appear.
4. Click on the **Install** button at the bottom left of the screen. A dialog box indicates when the installation procedure is done. Upon completion, quit the install program.
5. A folder called **sYbil f** now resides on your hard disk. This folder contains your working version of sYbil.

Uninstalling sYbil

If you need to format, restore, alter, or optimize your hard disk, or if you want to remove sYbil from your hard disk, you must uninstall the program first. Failure to properly uninstall the program may result in the loss of the installed program.

To uninstall sYbil, follow the same procedure as you did for installation, except: In step 4 (for either floppy or hard disk) click on the **Remove** button on the right side of the screen.

Condensed Instructions

The following instruction set is not comprehensive, and is only intended to get you "up and running" in the shortest possible time. Some features are not described here, and familiarity with basic Macintosh operations (e.g. using the mouse, organizing disks and folders, etc.), as well as the use of MIDI hardware with your computer is presumed. It is recommended that you read the entire manual to fully understand sYbil.

Setup:

1. Install sYbil on your hard disk or make a backup on a floppy by following the procedure described in the previous section.

2. Open the program by clicking on the sYbil icon.

3. Pull down the SETUP menu and select the appropriate frequency (0.5, 1.0, or 2.0 MHz) for your MIDI interface.

4. Pull down the "SETUP menu and select the proper port (COM or PRINTER) for your MIDI interface.

5. Choose either the Pad or the Keyboard interface screen from the SETUP menu.

6. Select the input MIDI channel by clicking on the "Channel" box on the Pad/Key screen. Be sure your controller is sending on the channel that you select.

7. Set the 16-note range over which sYbil will act by clicking on "Group 1" box on the Pad/Key screen. Click on "Group 2" to split the sYbil region into 2 8-note regions.

8. To set the default sustain characteristics, click on the sustain status box on the Pad/Key display.

Note Entry and Editing:

1. Click on the "Edit All" box on the Pad/Key display, or select "Spreadsheet" from the "Windows" menu. The spreadsheet window will open. Select a "cell" by clicking on it, and enter a note value by clicking on the piano keyboard in the bottom left corner of the screen.

   Use the ARROW keys to highlight new cells for editing. Note parameters (volume, gate time, and MIDI channel) for highlighted cells can be edited by clicking on the parameter status boxes at the bottom of the screen and selecting the desired value.

   Highlighted cells, rows, or columns can be cut, copied, pasted, or deleted by clicking on the EDIT boxes at the bottom right of the spreadsheet window. You can highlight multiple cells by holding down the SHIFT key while clicking on the desired cells.

2. To hear the chord on a given Pad/Key, click on the Pad/Key name field in the far left column while holding down the OPTION key.

3. To access the spreadsheet of the Cross-Switch or any of the CHAIN links, select the appropriate entry from the "Windows" menu.

Toggles:

1. To install a toggle, hold the mouse down on the desired Pad/Key while holding down the OPTION key. Select the icon corresponding to the appropriate toggle.

2. If the toggle requires additional input parameters, click on the toggle icon which appears on the Pad/Key. A window will open requesting additional information.

3. To remove a toggle, click on the Pad/Key while holding down the COMMAND and SHIFT keys.

Playing your Map:

1. Click on either the "PLAY MIDI" or "PLAY MAC" boxes on the Pad/Key screen. You may also enter play mode by choosing the appropriate entry in the PLAY menu.

2. Exit play mode by clicking the mouse.

File operations:

1. Maps can be loaded, saved, renamed, or deleted by choosing the appropriate entry in the "FILE" menu.

2. Maps can be imported or exported for use by other sYbilists (the program is copy protected, but the maps you create are not) using Macintosh, Atari, IBM-compatible, or Yamaha C1 computers. Choose the "IMPORT" or "EXPORT" entries from the "FILE" menu. Note that each segment of a chain as well as a cross-switch map must be exported or imported separately.

The Pad/Key Window

sYbil's main display screen can be configured to show either a representative keyboard segment (Figure 1) or a set of 16 drum pads (Figure 2). The information conveyed by these displays is identical. The choice of displays is provided so that you may choose a representation which most closely reflects your physical setup.

Access to all of sYbil's features is provided in either of these displays. You can communicate with the program by using the mouse to "click" at various locations on the screen. Mouse actions will either cause information displayed onscreen to change, or will open other windows as necessary.

This section will provide a brief description of the main features of the pad and keyboard windows. Throughout this manual we will refer to the main display as the "Pad/Key" screen unless we are referring to some feature specific to either the pad or keyboard displays shown in Figures 1 and 2, respectively. Bracketed numbers ([n]) refer to the numbered arrows used to indicate features in Figures 1 and 2.

Menu bar [1] - Provides access to the pull down menus.

Map name [2] - Shows the name of the current active map.

Note name [3]- Shows the location (note name and octave) of a given Pad/Key on your controller. The pad display also shows the MIDI note number in parenthesis. If there are notes assigned to a Pad/Key, the Note Name will appear in **bold** text style. "Silent" Pad/Key Note Names will appear in plain text styles.

Toggle icon [4] - Indicates the type of toggle installed on a given Pad/Key. Clicking on the toggle icon will allow you to edit any associated toggle parameters

Cross-Switch status [5] - Shows the threshold velocity

above which the cross-switch map becomes active, and the name of the cross-switch map. Click in the ON-OFF switch box to activate the Cross-Switch.

Velocity Filter status [6] - Shows the current velocity threshold value. The default value is 0 (off). Click in the box to change this setting.

Play/MIDI [7] - Toggles sYbil in and out of PLAY mode, which activates all installed toggles and options. Input is received from a MIDI controller.

Play/MAC [8] - Toggles sYbil in and out of PLAY mode, which activates all installed toggles and options. Input is received from the Macintosh keyboard. Keys 1-8 and Q-I correspond to Pad/Keys 1 through 16. Cross-Switch is accessed by holding down the SHIFT key while pressing a key.

Edit [9] - Clicking on this box opens the Note Spreadsheet window.

Group 1 Low Note Status [10] - Shows the low note of the 16-note range occupied by sYbil. Click in the box to select a new low-note.

Group 2 Low Note Status [11] - Click in this box to set the low note for Group 2, which splits sYbil into 2 8-note regions.

Input MIDI Channel status [12] - Shows the input MIDI channel (the default is channel 1). Click in the box to change to change settings.

Sustain status [13] - Shows the current sustain type. Click in the ON-OFF switch box to activate or deactivate the sustain option.

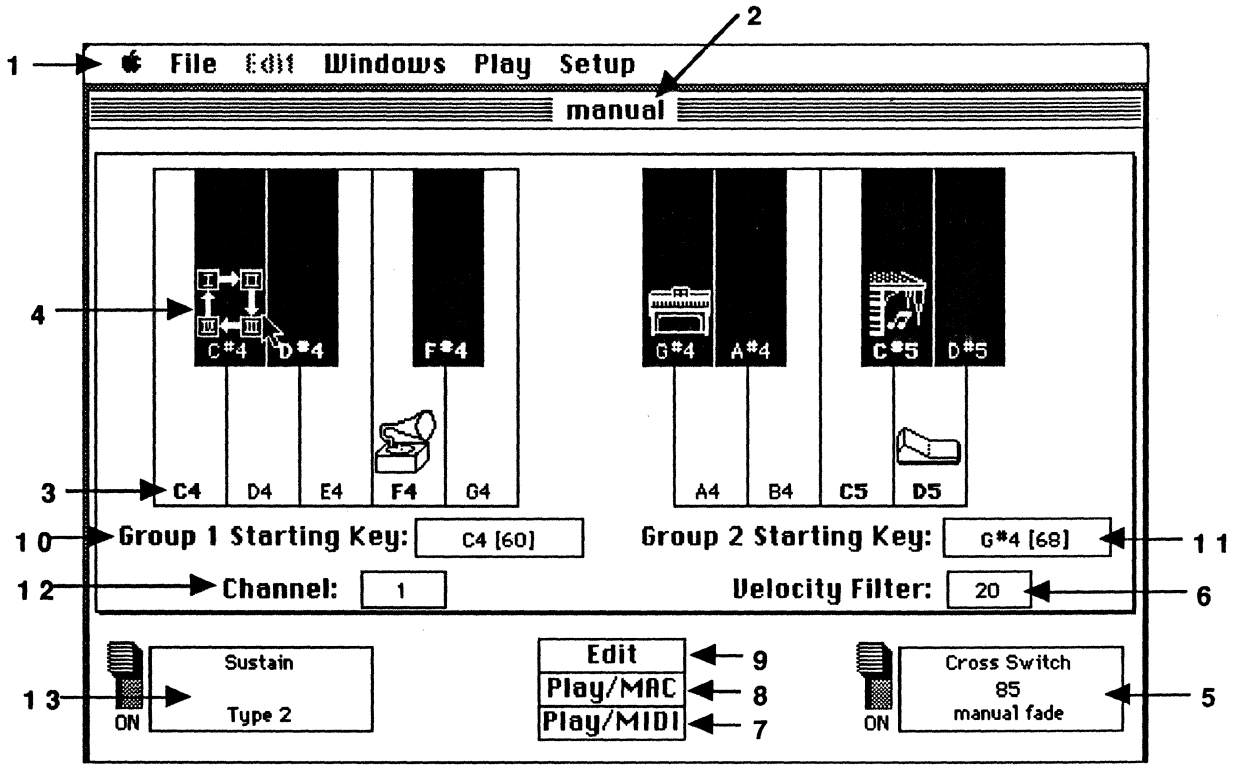


Figure 1: The Keyboard Screen

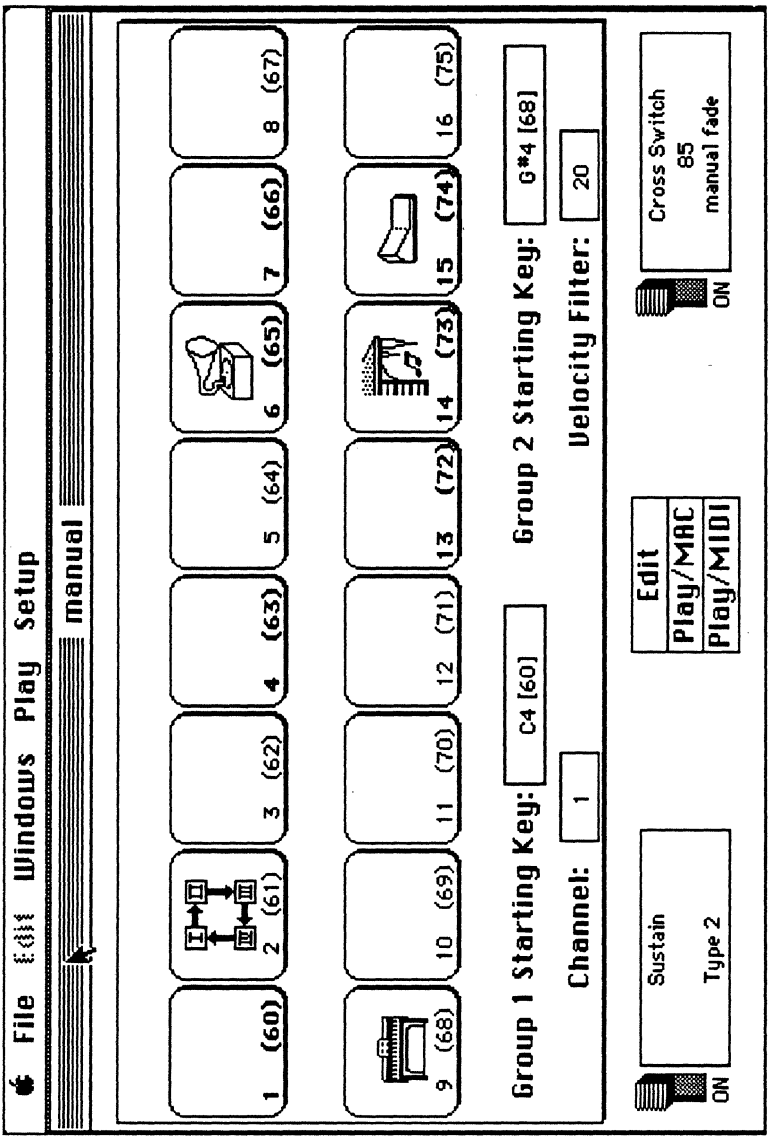


Figure 2: Drum Pad Screen

Identity Maps

sYbil allows you to integrate your performance and compositional skills in some very unique ways. On one hand, you are in complete control of what you play, so that there is neither a random nor a "player piano" aspect to your performance.

On the other hand, sYbil allows you to radically reconfigure your instrument, and so requires that you think about the instrument itself, and your technique on your instrument (your strengths and your limitations), as well as the musical aspects of what you might want to play in a given performance.

These and many other factors are all brought together in the basic component of a sYbil performance/ composition, the **IDENTITY MAP** (throughout this manual we will use the terms Identity Map and Map interchangeably).

You could think of an identity map as a painter's palette, where the colors are chords and orchestrations that you have mixed yourself by using your own voicings and instrumentation.

In addition, there are several ways sYbil allows you to change to a new palette instantaneously. A painter uses a few basic colors, but achieves his vision by mixing colors, and using shadings and textures. With sYbil, you can mix and expand upon the colors of the identity map by using "Toggles" and "Options" that you control from your instrument, in real time.

The identity map consists of many components, including the notes and chords you input, their characteristics (MIDI channel, volume, gate time), the specifics of how sYbil will interact with your controller (e.g. the note range and MIDI channel sYbil is to occupy), the toggles you wish to use, and any of sYbil's options that are used.

All of this information can be stored in a file which can be recalled the next time you want to perform using that map. The number of maps you can generate is unlimited. A map may be as simple as a set of 16 4-note chords with no toggles, or it may be a collection of 5 maps joined together by the chain toggle and cross-switch option. The following sections will explain various aspects of the map making process.

Setting Up an Identity Map

The first step in developing an identity map is to set things up so that sYbil can work with your MIDI controller and sound modules in a way that is both comfortable for you as a player and musically effective. The following steps will show you how to configure sYbil:

1. You can use either a pad controller or a keyboard interface with sYbil. Pull down the SETUP menu by moving the cursor to SETUP in the menu bar at the top of the display, and click on either the "Pad" or "Keyboard" menu entry. You are free to change display types at any time while you are using sYbil. All musical and MIDI information is retained when the display type is changed.

2. Select the MIDI channel that sYbil will receive MIDI data on (be sure that your MIDI controller is set to transmit over the same channel). Do this by clicking on the "CHANNEL" box in the lower left-hand portion of the display.

3. Choose the 16 note region where sYbil is active by holding the mouse down in the "Group 1 Starting Key" box , and highlighting a note in the note list which pops up. The note you have selected is the lowest note of a consecutive 16 note region (you can divide the active region into 2 regions of 8 notes apiece with the "Split" feature described in the "Options" section).

4. You can set the startup sound on up to 16 channels on your sound source by selecting the "PC Map" entry in the "Windows" menu. Upon selection, a window (Figure 3) will open which allows you determine what program changes the identity map will send.

   Column 1 in this window lists the startup program changes that will be sent each time you enter PLAY mode. Select the "CH# 1" box in Column 1 (although you can edit the other 3 columns, you will need to install a Program Change toggle to use them effectively - see the "Toggles" section for more information on the Program Change toggle).

   Enter the number of the patch you want on MIDI channel 1 by holding the mouse down in the "PC Number" box and selecting the desired patch number from the pop-up number list which appears. Repeat this procedure for channels 2 through 16.

   Each time you select a "cell" in the PC map, it will assume the value shown in the PC Number box. Select global change if you want every occurrence of the value in a selected cell to be replaced by the number in the PC number box.

   You can check to see if the program changes are correct by sending the entire column to your sound module. Do this by clicking on the "Send Column 1" box in the lower right-hand region of the window. When you have set the startup sounds the way you want them, either click on the CLOSE box in the upper left hand corner, or open a new window with the WINDOWS menu.

   NOTE: Some manufacturers number their sounds from 1 to 128 in their literature, but send them as program changes 0 to 127. Check your program changes with the Send feature to avoid unpleasant surprises!

5. The Velocity Filter option is designed to optimize the use of sYbil with guitar, wind, or violin MIDI controllers. When active, it filters out low velocity events, such as those associated with string and pick noise on a guitar controller.

   To use this option, hold the mouse down in the "Velocity Filter" box on the Pad/Key screen, and select the desired threshold level from the pop-up number list which appears. Events with velocities below this displayed threshold will be suppressed. If you don't want to use the velocity filter, be sure that the threshold is set to the default value 0.

Figure 3: The Program Change (PC) Window

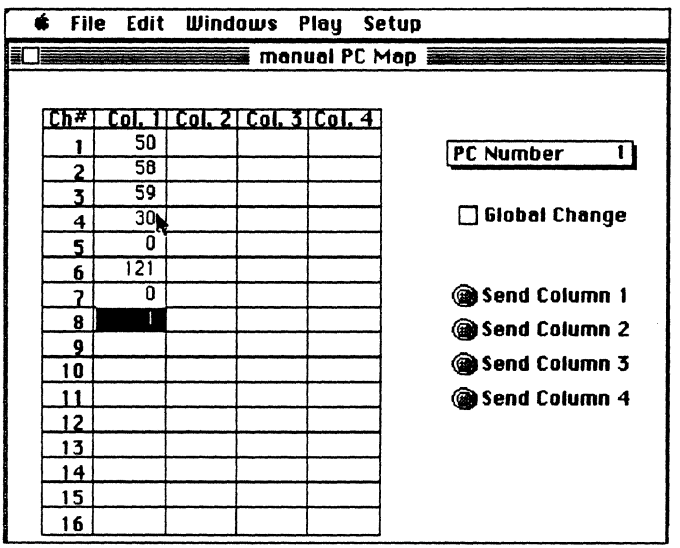
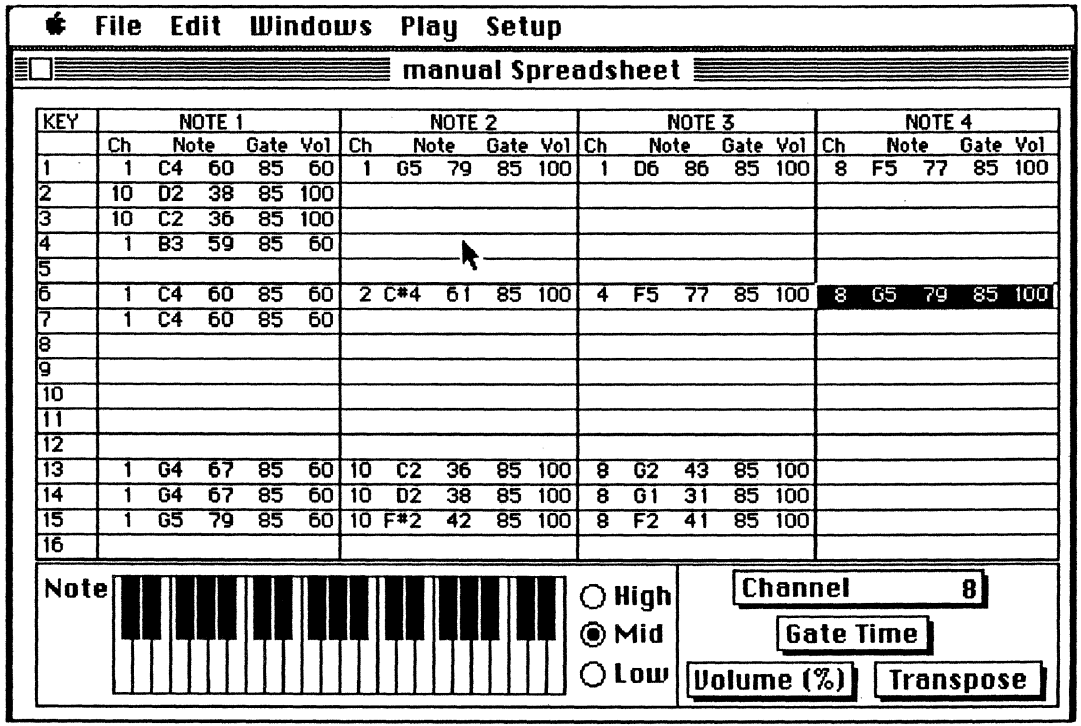


Figure 4: The Spreadsheet Window



Entering and Editing Notes Using the Spreadsheet

Now that you have gone through the basic setup procedures described in Section I, you will want to use your own musical ideas with sYbil. The first stage of the process is entering the notes and chords which comprise an identity map. Maps can be very simple (e.g. a single drum on each pad) or they may contain complex harmonies and orchestrations - the choices are all yours!

To begin editing notes,click on the "Edit All" box on the Pad/Key screen, or pull down the WINDOWS menu and select "Spreadsheet". Notes are entered into a 16 x 4 spreadsheet (Figure 4) in which each row consists of 4 cells that represent the 4 notes playable from a single Pad/Key.

The rows are labeled at the far left with the appropriate controller note, such that the top row of the spreadsheet represents the first (i.e. lowest) note of the active region, as defined by the "Group 1" setup procedure (see Section I for Group 1 Setup).

Each note can be assigned its own pitch, MIDI channel, gate time, and relative volume. The following procedure describes the note entry and editing process:

1. Select a cell to edit by clicking on it. Selected cells will be highlighted. Multiple cells can be selected by holding down the SHIFT key while clicking on the desired cells. An entire row may be selected by clicking on the Pad/Key name in the far left-hand column. Similarly, an entire column may be selected by clicking on the text heading "Ch Note Vol Gate" at the top of the desired row. Highlight new cells for editing by using the ARROW keys on the Mac keyboard.

2. To enter a note into the cell(s) you have selected, click on a note on the "screen keyboard" graphic in the lower left-hand corner of the display. When you click on the note, its name and MIDI note number will be displayed in the box below the screen keyboard.

To set the range of the keyboard, click on the adjacent buttons labeled "High", "Mid", and "Low". The ranges are defined as follows:

Low	C0 to E3
Mid	C3 to E6
High	C6 to E9

NOTE: sYbil uses the convention that middle C is defined as C4, note number 60.

3. To assign or change the number of the outgoing MIDI channel for a given note, select the note and the Channel status box in the lower right region of the screen. The selected note cell will assume the MIDI channel shown in the channel box. To change this value, hold the mouse down in the Channel Status box and select a channel value between 1 and 16 in the pop-up number list which opens.

4. The volume parameter scales incoming velocity data from your controller to a range you determine. The number in the Volume status box represents the percentage of the input velocity that is to be sent out. To scale the relative volume of a note, select the note and hold the mouse down in the Volume Status box.

   Select a volume value between 0 and 100 in the pop-up number list which opens. If you not want to scale relative volumes, set all volumes to the default value (100). For more information on volume scaling, see the section "Composing and Performing with sYbil".

5. To set the gate time of a note (i.e. the number of

milliseconds for which the note is on), select the note and then hold the mouse down on on the Gate Time status box . Select a gate time value from the pop-up number list which opens.

Each increment of gate time represents a duration of 1/60 second so that a note with a gate time of 60 will sound for 1 second. For more information on gate times, see the section "Composing and Performing with sYbil".

6. Once a cell has been assigned a note, that note can be transposed by selecting the note (or notes) and holding the mouse down in the Transpose status box. Select the desired number of half steps that the note should be transposed by from the pop-up number list which opens.

7. To clear all information from a cell, select the cell and then select "Clear" from the EDIT menu. The cell will be blank after this operation.

8. To copy the contents of a cell to another cell, first select the source cell and then select "Copy" from the EDIT menu. Next, select the destination cell(s) and then select "Paste" from the EDIT menu. The contents of all destination cells will be replaced with the contents of the source cell. The contents of the source cell remain intact.

9. To move the contents of a cell to another cell, select the source cell and "Cut" from the EDIT menu, then

select the destination cell(s) and "Paste" from the EDIT menu. The contents of all destination cells will be replaced with the contents of the source cell. However, the contents of the source cell will be deleted.

10. Use the "Select All" entry in the EDIT menu to handle operations which require that all (or nearly all) of the spreadsheet is selected. Clicking on "Select All" will select the entire spreadsheet. Holding down the COMMAND key and clicking on individual cells will deselect them once "Select All" has been activated.

11. To hear the chord on any pad or key, click on Pad/Key name field in the far left column while holding down the OPTION key.

12. For quick access to the spreadsheet of the Cross-Switch map or any of the CHAIN links, select the appropriate entry from the WINDOWS menu.

Toggles

sYbil allows you to alter the chord maps you've entered into the spreadsheet in real time from your controller. The types of changes sYbil offers have been designed to increase the amount of musical expression and flexibility at your disposal, and to open up what might otherwise be rather "stiff" MIDI controllers (pad controllers, for example).

Real time changes are sent by assigning "toggles" to keys/pads/frets within the 16 note sYbil region. Toggle keys will play whatever notes and sounds have been assigned to them on the spreadsheet, in addition to performing the toggle function.

In this section we will explain how to install and use toggles.

Toggle Installation:

The following procedure is used to install a toggle on a pad or key:

1. Hold the mouse down in the Pad/Key while depressing the OPTION key. A scrolling, pop-up list of toggle icons will appear.

2. Select the icon corresponding to the desired toggle by clicking on it. The icon should appear on the Pad/Key.

3. If the toggle has editable parameters then click on the toggle icon. A dialog box will open which will ask you to input the appropriate parameters (Chain Reset, Increment Reset, Sustain Type, Hang, Thru, and Square One toggles do not have editable parameters, so no dialog box will appear for these).

Toggle Removal:

1. Click on the Pad/Key with the toggle you wish to remove while holding down the COMMAND and SHIFT keys.

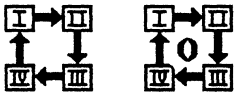
Toggle Rules:

1. A given toggle can only be used on 1 key or pad in a setting.

2. Toggles can't be moved in real time by either cross-switching or chaining. Choice and position of toggles are determined by the 1st link in a chain of identity maps. Toggles placed on a cross-switch map have no effect.

The following is a more detailed description of the operation of the various toggles:

CHAIN:



Chain Chain Reset

A set of up to 4 identity maps, each consisting of 16 4-note chords, can be joined together in a chain by installing a CHAIN toggle on a Pad/Key in the sYbil region. Each time you play the note designated as the CHAIN toggle on your controller a new set of 16 4-note chords is activated.

Once the map corresponding to the last link in the chain has been activated, the next CHAIN toggle event will cause the 1st link in the chain to be reactivated, and subsequent CHAIN toggle events will continue the process of cycling through the links of the chain. At any point in the CHAIN cycle, you can return to the 1st link in the chain by using either the SQUARE ONE or CHAIN RESET toggle.

The current status of the CHAIN toggle is indicated in the CHAIN status box in the lower right of the Pad/Key screen. The highlighted square indicates which of the links in the chain is currently active. The CHAIN status box is updated each time the CHAIN, CHAIN RESET, or SQUARE ONE toggle is hit.

Once you have installed the chain toggle (using the general toggle installation procedure described above) you will need to input the names of the map(s) which will serve as the links of the chain. Here is the procedure for specifying chain links:

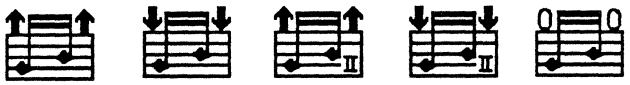
1. Click on the CHAIN icon at the bottom of the Pad/Key that the toggle is installed on. This will open the Chain Setup window.

2. Click on the box labeled "Link 1" . A file selection window will open, allowing you to specify the 1st link in the chain by either double clicking on it's name, or selecting it then clicking "OK".

3. Repeat the above process for the remaining segments.

4. Once you are satisfied with the chain you have selected click on the "OK" box to return to the previous display. Otherwise, click "Cancel" to return to the previous display without saving the chain.

Transposition Toggles - INCREMENT/DECREMENT:



INC 1 DEC 1 INC 2 DEC 2 INC Reset

Increment/decrement toggles are used to transpose all "sYbilized" note assignments up or down by some interval or series of intervals. Notes outside of the 16-note sYbil region of your controller are not affected by the increment toggles.

There are 2 transposition toggle types, and each type has an increment and a decrement option, so there are 4 possible transposition toggles possible within a given map. The effect of the transposition toggles can be undone with either the Increment Reset or Square One toggles.

Type 1 transposition toggles move the entire sYbil region up or down by a predetermined interval each time the toggle key or pad is hit. The Inc 1 toggle transposes up and Dec 1transposes down. It is important to realize that not only does the toggle Pad/Key get transposed, but the entire sYbil region does as well.

Here is the procedure for using the Increment/Decrement 1 toggle:

1. Click on the Inc 1 (or Dec 1) icon at the bottom of the Pad/Key that the toggle has been installed on. This will open the Inc 1 setup window.

2. Type in the number of half steps you wish to transpose by.

3. Click on the "OK" box when you have set the desired interval, or "Cancel" to return to the previous Inc 1 status.

NOTE: The transposition interval specified for Inc 1 will automatically serve as the interval for Dec 1.

EXAMPLE: Increment 1
Suppose we place an Inc 1 toggle on a key which sounds a single C4 note. If we set the toggle to transpose by a whole step and strike the key 7 times we will hear the notes D E F# G# A# C D, i.e. an ascending whole-tone scale, starting on D4. If we instead put the Dec 1 toggle on the same key we would hear Bb Ab Gb E D C Bb, i.e. the descending whole tone scale starting on Bb3.

Type 2 transposition toggles transpose the sYbil region up or down by a predetermined series of intervals. Each time the toggle key or pad is hit the sYbil region is transposed by the next interval in the series. An increment 2 interval series can specify both upward and downward transpositions.

The Inc 2 and Dec 2 series are mirror images of each other in the sense that they use the same series of transposition intervals but transpose in opposite directions (e.g. an Inc 2 transposition series of 2,-4,5 would result in a Dec 2 series of -2,4,-5). Here is the procedure for using the Inc 2 toggle:

1. Click on the Inc 2 (or Dec 2) icon at the bottom of the Pad/Key that the toggle is installed on. This will open the Inc 2 setup window.

2. You may type in a series of up to 25 intervals separated by commas. Indicate downward transpositions by negative numbers. No delimiter is used to terminate the series.

3. Click "OK" to accept the series, or "Cancel" to reject.

EXAMPLE: Increment 2
An Increment 2 toggle with the transposition series 0,2,2,1,2,2,2,1,-1,-2,-2,-2,-1,-2,-2 placed on a Pad/Key with a single C4 note will sound as an ascending C major scale starting on C4 followed by a descending C major scale starting on C5 if the toggle key is struck 15 times consecutively.

Any notes which have been transposed due to the action of ANY of the increment toggles can be restored to their original, un-transposed state by using either the INCREMENT RESET or SQUARE ONE toggles.

SUSTAIN and HANG:


Sustain


Hang

Sustain Type

The sustain toggles allow you to alter the sustain characteristics of outgoing notes. This feature is particularly useful for instruments with limited sustain capabilities (e.g. pad controllers), and provides an added degree of freedom for any instrument by allowing you to sustain notes or chords without having to keep your fingers on the keys or strings (very much like having an extra hand!).

sYbil offers 2 sustain types which can be activated either by a toggle or by a click of the mouse on the Pad/Keyboard display screen. A 3rd sustain effect allows you to "hang" (sustain) chords or notes indefinitely while you continue to play other notes or chords. The 2 basic sustain types obey the following "rules":

TYPE I - The first attack on a given Pad/Key in the 16-note sYbil region causes the associated chord to be sustained until the next Pad/Key in the region is struck.

Consecutive events on the same Pad/Key will result in the first outgoing note/chord being sustained, but subsequent notes/chords will be cut short so that only percussive sounds with extremely short gate times will be audible (the gate time referred to here is the duration of the patch or sample sound, which is determined by your hardware, not sYbil).

Notes outside of the sYbil region which are played are treated as "MIDI Thru" events, and do not cut off TYPE I sustained chords.

EXAMPLE: Type I Sustain
If type 1 sustain is placed on a key that is orchestrated to sound horns and drums, a series of consecutive attacks on that key will result in the horns and drums sounding together on the first attack. The horns will be sustained until the 2nd attack, and only the drums will sound on the 2nd and later attacks.

TYPE II - The chord associated with each Pad/Key in the 16-note sYbil region is sustained until the next sYbil Pad/Key is played. Notes outside of the sYbil region which are played are treated as "MIDI Thru" events, and do not cut off TYPE II sustained chords.

Sustain can be activated by either installing the SUSTAIN toggle on a Pad/Key, or using the Sustain status box on the front panel. Either click on the status box, or on the "Sustain" text field on the Pad/Key on which the toggle is installed, and a dialog box will open and ask you to choose which sustain type you want to use.

Use the SUSTAIN toggle when you want to be able to turn sustain on and off in real time from your controller. If you want to keep sustain on at all times, install sustain from the front panel status box. When sustain is activated by a toggle, the default state (i.e. when you first begin to play, or after you hit a SQUARE ONE toggle) is sustain OFF, and the 1st time you hit the SUSTAIN toggle you will turn the sustain ON.

When sustain is activated from the status box and the SUSTAIN toggle is also installed, the default state is sustain ON, and the 1st time you hit the SUSTAIN toggle sustain will be turned OFF.

The SUSTAIN TYPE toggle allows you to toggle between sustain types 1 and 2 in real time from your controller (this feature can be particularly useful for articulating horn parts, creating slap bass lines, or making drum parts stand out).

The default sustain type will be the one which appears in the sustain status box. The SUSTAIN TYPE toggle does not require any input information.

The HANG toggle allows you to sustain a chord , independent of other pads/keys that you may play. To "hang" a chord:

1. Install the HANG toggle on a Pad/Key.
2. Play the Pad/Key with the chord you wish to sustain.
3. Hit the "HANG" Pad/Key.

The chord will now sustain regardless of what you play. To stop the chord from playing, either hit the "HANG" pad again, or hit the pad with the original chord that was sustained (if you are hanging a chord with an effect such as cross-switch, chain, or increment 2, you must be sure that you play the same chord as the one you are trying to shut off). The HANG toggle does not require any input information.

PROGRAM CHANGE:

In addition to setting the startup sounds for a map, you can completely change orchestrations up to 4 times by using the PROGRAM CHANGE toggle. This toggle will cause new patches to be sent on all 16 MIDI channels. Install the toggle on a Pad/Key and click on the PROGRAM CHANGE icon on the toggle Pad/Key to open the program change setup window (see Figure 3).

Column 1 determines the default patch settings (you can also set these with the "PC Map" entry in the "Windows" menu - see the section "Setting up an Identity Map") which are active when the map is first opened or after a SQUARE ONE toggle is hit.

Columns 2-4 represent banks of patch changes that will be sent on subsequent hits of the PROGRAM CHANGE toggle, i.e. the 1st hit of the toggle will cause the 16 patch changes in column 2 to be sent, the next hits will send columns 3, 4, 1, 2 etc.

To edit the PC map, select the "cell" which corresponds to the MIDI channel number and patch bank you want to edit. The "cell" will assume the value shown in the "PC number" box.

Set this number by holding the mouse down in the "PC Number" box and selecting the desired patch value from the pop-up number list which appears (check your sound module manual for the correct patch numbers). To change all occurrences of a given value to the current "PC Number" , click "Global Change" and then select a cell containing the value you wish to change.

You can check to see if program changes are correct by sending an entire patch bank to your sound module. Do this by clicking on the appropriate "Send Column" box on the lower right-hand region of the window.

The current status of the PC map is shown in the PC Map status box in the upper left of the Pad/Key screen. The highlighted square indicates the number of the patch bank last sent. This status box will update anytime either the PC or SQUARE ONE toggle is hit.

THRU:

This toggle allows you to "turn off" sYbil, so that all input data from your controller will be treated as MIDI Thru on the channel displayed in the MIDI channel status box on the front panel.

When this toggle is installed and activated, none of the sYbil's effects are operational with the exception of the Pad/Key to which the THRU toggle is assigned. Subsequent hits of the the THRU toggle pad will cause sYbil to be alternately turned on and off. This toggle is particularly useful when you want to alternate between a conventional and "sYbilized" performance. The THRU toggle requires no input parameters.

SQUARE ONE:

This toggle causes all toggles to return to their initial (default) states. Transpositions caused by increment toggles will be undone, the chain will return to its 1st link, the program change map will return to the startup state (column 1), and the sustain type will revert to the type originally chosen. The Hang toggle is unaffected by Square One.

Options

Velocity Cross-Switch

You can access chords from either of two co-resident maps by using the velocity cross-switch option. Note events from your controller with velocities below a predetermined threshold are routed to the active identity map, i.e. the current link in the chain.

Note events with velocities above or equal to the threshold velocity are routed to a separate 16 x 4 cross-switch map (NOTE: If you are using the 1-8 and Q-I keys of the Mac keyboard as a controller, hold down the SHIFT key to emulate high velocity events). This is a particularly useful feature for controllers with a limited number of event triggers, such as pad controllers.

To install velocity cross-switch, hold the mouse down in the Cross-Switch status box in the lower right hand corner of the screen. A pop-up number list will allow you to set the threshold velocity . Controller events with velocities above the selected threshold will cause the chords on the cross-switch map to be played (MIDI assigns velocity numbers between 0 and 127, with 0 being a non-event, and 127 the hardest possible attack).

Once you have selected a threshold, a dialog box will open, with a list of maps stored in the current folder. Select the map that you want to access with high velocity controller events. For quick access to the Spreadsheet of the Cross-Switch map, select "Cross-Switch" from the WINDOWS menu.

NOTE: Cross-switch has no effect on notes outside the 16-note sYbil range, and does not recognize toggles which are placed on the cross-switch map.

Split

This option allows you to split sYbil into 2 8-note regions that can be located anywhere within your controller's range. Toggles activated in one region will affect both regions. In fact, the 2 regions are linked in all ways except spatially. There are a number of uses for this option, for example assigning different sections of the ensemble (such as rhythm and lead) to different hands for keyboard players.

For guitar or horn players, you might wish to assign a rhythm section to the lowest section of the instrument, and a horn section to the highest region, so that the entire mid-range of the instrument would be available to you as MIDI Thru. To define a split:

1. Set the lower region (Group 1) as described in the section "Setting up an Identity Map" .

2. To set the upper region (Group 2), hold the mouse down in the "Group 2" "Starting Notes" status box. Choose the Group 2 starting note from the pop-up number list which appears.

If you move Group 1, Group 2 will also change by the same amount. However, setting Group 2 with the SPLIT option does not affect the position of Group 1.

File Operations - Storing and Organizing Your Maps

Once you have composed an identity map you will want to store it to disk so that you may recall it at a later time. sYbil allows you to load, store, or rename identity maps. In addition, maps can be imported and exported in a file format which can be understood by versions of sYbil which run on the Atari ST and IBM-PC compatible computers, as well as other Macintoshes.

The import/export feature allows maps to be exchanged between sYbilists on the primary music computers.

File operations are all performed by selecting the appropriate entry from the "File" menu.

OPEN.....Loads a new identity map. Selecting "Load" opens a scrolling window which lists all maps in the current directory. Either double-clicking on a map name or selecting the name and "OK" will open and load that map.

If you are not familiar with the way files are organized into folders or the basic desktop organization of the Macintosh, consult the instruction manual that came with your computer. Note that the map file contains all setup, note, and toggle information, including chain and cross-switch information. When the load operation is complete, the new map will appear in the active window.

SAVE.....Saves the current identity map, including all setup, note, and toggle information.

SAVE AS.....Saves the current identity map, including all setup, note, and toggle information. Cross-switch and chain maps used will be saved as part of the map file. Selecting "Save As" opens a window which asks you to give the file a name an specify where it should be stored. To name a file, simply type it in from the computer keyboard and press return or click on "OK" when you have finished. If the file you want to save already exists, you will be asked to confirm that you want to overwrite it.

REVERT.....Replaces the current map with the last version saved or the original version if nothing has been saved since the file was first loaded.

NEW.....Clears the current active map from memory and creates a new map which will be the active map.

PRINT.....Prints out a summary of the current identity map on your system's printer. The summary includes all information in the note spreadsheet, as well as a listing of all installed options and toggles, and their associated parameters.

EXPORT.....Creates an ASCII text file which contains all information in the active map. You must export each Chain segment and Cross-Switch map separately. Map files may be freely exchanged between sYbilists on all computer platforms.

IMPORT.....Allows you to read an identity map file into sYbil. Files from Atari, IBM-PC compatible, and Yamaha C1 versions of sYbil may also be read. We recommend exchanging files using a telephone bulletin board and a modem. Direct file transfer via the Modem port is NOT recommended.

You may be able to read IBM formatted disks with sYbil files from either IBM compatibles or Atari by using the Apple File Exchange program and the FDHD drive which is offered with recent Macintosh computers.

QUIT.....Allows you to quit sYbil and return to the Mac desktop. A dialog box will ask you to confirm that you want to quit the program.

Composing and Performing with sYbil

sYbil provides you with a powerful set of tools which allow you to play music utilizing the latest MIDI technology, while letting you think like a musician (NOT an engineer!). The key to effective performance with sYbil is to understand how to combine the various components of the program to let you make your own musical statement.

Experiment with the toggles and options to find the particular combinations that best express your ideas. Often a slight change, perhaps a single toggle, can radically alter an identity map.

In this section, we will explore some features of sYbil that can enhance live performance. Some of these features have been described in earlier sections. However, we will not necessarily concern ourselves here with the "nuts and bolts" aspects of the various features, except where it helps to better understand how to use a feature for performance.

The suggestions for using sYbil we offer here are not intended to serve as "rules" for composition or live performance. Instead, we simply want to share some interesting ways of using the program that have been passed along by other users (and even a few that we stumbled across ourselves!)

The range of possibilities sYbil affords is virtually limitless, and we expect that you will come up with some unique and interesting music of your own with sYbil. We are always glad to hear from users about how they integrate the program into their performances, and even happier to hear tapes - so feel free to write us and let us know how you are doing.

Play Mode

When you enter the PLAY mode by clicking in either of the PLAY boxes on the pad key screen (or selecting either of the entries in the PLAY menu), all installed toggles and options become active. This is the mode you will use for live performance.

PLAY MIDI allows you to control sYbil with input from your MIDI controller. PLAY MAC allows you to control sYbil with input from the Macintosh keyboard - keys 1 through 8 and Q through I correspond to the pads in groups 1 and 2 respectively. Velocity Cross-Switch can be accessed on the Mac keyboard by holding down the SHIFT key and playing one of the active keys to simulate a high velocity event.

The real time screen update of the chain and program change toggles allow you to monitor your position in the identity map. The highlighted boxes allow you to see what's going on graphically, so that you don't have to worry about reading the details of the screen during live performance.

You can enter PLAY mode from anywhere in sYbil, with as many windows open as you like, by using the PLAY menu. To exit PLAY mode, simply click the mouse.

MIDI Thru

Notes outside of the 16-note sYbil region are patched directly through to the sound module on the sYbil input MIDI channel (i.e. the channel displayed in the MIDI Channel status box on the Pad/Key display). In other words, for notes outside of the sYbil region your controller will behave as if it were connected directly to your sound module. This offers several interesting performance possibilities:

* If your controller has a range much greater than 16 notes (e.g. keyboard, guitar, or wind) than you have a conventional MIDI instrument as well as sYbil on the same controller. You can use sYbil to accompany the conventional portion of the instrument. For example, a keyboard player could play bass, drums, and chords with sYbil in his left hand, and still solo over the "rhythm section" with his right hand.

* By combining the MIDI Thru region with Sustain and Hang effects in the sYbil region, it is possible to play chords much larger than 4 notes. Although commonplace for keyboard players, this is it is no small feat for guitar players, drummers, or horn players.

* Toggles used in the sYbil region do not affect the MIDI Thru region EXCEPT for the Program Change and Thru toggles. By using the Program Change toggle to send a patch change on the sYbil input MIDI channel you can change the MIDI Thru sound without pushing buttons or foot pedals.

The ability to quickly call up new sounds for the MIDI Thru region further enhances your ability to sound like a multi-instrumental ensemble. The Thru toggle gives you access to the entire range of your instrument (minus one note), but lets you call up the power of sYbil at will.

The Thru toggle can be most interesting when you are playing with a group, as you can alternate between your "normal" role in the group when sYbil is turned off, and the "expanded" role sYbil allows you to play when she is on.

More About Parameters (gate time, volume and channel).

When you enter notes and chords into an identity map, you also specify the volume, gate time, and MIDI channel of each note. These 3 parameters are very much part of the map making process, and in fact can be as important as dynamic markings or orchestration are to the conventional composition process.

The MIDI channel parameter allows you to set each note in a map to any of the 16 available MIDI channels. This is a powerful orchestration tool that allows you to take full advantage of a multi-timbral, multi-channel sound module.

For example, let's assume you have a 4-note chord on channels 1-4, with each channel assigned to a different brass or sax patch (e.g. trombone, tenor, trumpets 1&2). Suppose you want to change the orchestration of the chord (say from a horn section to a string section), but do not want to change the voicing.

There are at least 2 ways to do this. Either you could use a program change toggle to change the patches on the channels 1-4 to string patches, or you could use the chain toggle bring up a new map with the same chord assigned to 4 different MIDI channels that were assigned string patches.

The volume parameter scales incoming velocity data from your controller to a range you determine. In terms of what you hear, it is the volume range of the note that is set. The range of MIDI velocity events is 0 - 127, where 127 represents the highest velocity (velocity is basically a measure of how hard you strike a note).

If you set a note volume to 50, you are causing an incoming velocity of 127 to be sent out with a velocity of 64, i.e. the volume parameter represents the percent of the incoming velocity that is to be sent out for a given note.

Use this parameter to balance chord voicings, as some sound modules are very uneven in their setting of patch volumes. If you don't want to do any volume scaling, leave all notes set to the default volume of 100.

The gate time parameter sets the duration of each note. Thus individual notes within a chord can have different durations. Gate time values range from 0 to 999, with each unit of time corresponding to 1/60 second, so that a gate time of 60 yields a note with a duration of 1 second.

By using different gate times within a chord, you can cause the chord to shut off gradually, and achieve a more realistic release. You can also leave some notes on after the others have shut off and then "hang" these remaining notes so that they will sustain while you continue to play.

Keep in mind that gate times are only active while sustain is OFF, so that by toggling sustain ON and OFF, you'll get a very different sound and feel. This difference can be used to great advantage.

Using sYbil with Your MIDI Controller

sYbil works with any kind of MIDI controller. However, different controllers lend themselves to different uses of sYbil. You should consider the specifics of your controller, its MIDI implementation, and the way it is played when using it with sYbil.

For example, the increment toggle might be extremely useful to a drummer using a pad controller, but less comfortable to a keyboard player who wants to preserve some relationship between the way things sound and the way they look on a keyboard.

The same keyboard player might find Velocity Cross-Switch a convenient feature, while a guitar player might have difficulty controlling his pick strokes well enough to take advantage of it.

Guitar controllers can usually be set to transmit in either MONO mode, where each string transmits on a separate MIDI channel, or POLY mode, where all 6 strings transmit over the same MIDI channel.

Using sYbil with a guitar controller in MONO mode will only allow sYbil to be active on a single string. POLY mode is a more versatile setup, in that an entire region of the instrument will be "sYbilized", with the rest of the instrument range treated as MIDI Thru on the input channel.

Continuous controller data, such as pitchwheel and aftertouch, does not affect the "sYbil" range itself, but is processed in the MIDI Thru ranges above and below sYbil. In general, continuous controller data is handled more effectively when sustain is ON.

When sustain is OFF, notes in the "sYbil" region will be shut off before their gate times have elapsed by continuous controller data from the MIDI Thru regions. If you plan on using sYbil without sustain ON, you might want to turn off or filter out any continuous controller data that your controller is sending.

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