

Edit Menu

This menu is used to cut, copy, and paste the objects on a particular card, parts of the background, or even entire cards.

Undo: This is used whenever you change your mind about certain editing actions. For example, if you cut a button from a card, and then change your mind, you can choose Undo, and the button will be put back as it was before the cut. If you paste a graphic onto the wrong card, choosing Undo takes the graphic back off. Undo only reverses the *very last* action, and not all actions can be undone.

Cut: An object (graphic, text or button) is cut by selecting the object with the edit tool (the pointer - see the Tools menu), and then choosing Cut from the Edit menu. Once selected, you can also press Apple-X on the keyboard to do a Cut. The Cut function removes the object from the card, and places it on the *clipboard*. The clipboard is a term used to describe a temporary memory buffer where things are held while you decide what to do with them. The clipboard is used with the Cut, Copy, and Paste commands to move objects from one card to another.

Once Cut, the object remains on the clipboard until you either quit HyperStudio, or until Cut or Copy is chosen again from the menu.

In addition to objects, you can also cut portions of the background for pasting to another location. Use the lasso and selector tools (Tools menu) to select the area to be cut, copied, or cleared (erased).

Copy: Copy is identical to Cut, except that the original object is left in place, and a copy of the object is placed on the clipboard. Pressing Apple-C is equivalent to choosing Copy from the menu.

Backgrounds can be copied from one card to another, and this is the preferred way of using the same background on two different cards in those cases where the second card is not created directly from the first.

Portions of the background can also be copied using the lasso and selector tools in the Tools menu.

Paste: Choosing Paste from the Edit menu places a copy of the object on the clipboard onto the current card. Once pasted, you can use the mouse to position the object, or portion of the background, in the desired position. Clicking the mouse anywhere outside the pasted object "drops" the item in the current position. Apple-V is the keyboard equivalent of the Paste command. When a card is pasted, it is always placed at the end of the current stack.

Clear: This is used to delete an object without copying it to the clipboard. To delete an object, simply click on it once with the edit tool (pointer - Tools menu). When the object is selected, choose Clear from the Edit menu, or press the Clear (or Delete) key.

New Card: This is used each time you want to begin a new card in your stack. Each time New Card is selected, the background of the current card is used for the new card. Any objects on the current card are not copied.

Delete Card: This is used to remove a card from the stack. Note that this must be done with some care, particularly in those cases where buttons on other cards in the stack are linked to the card you are about to delete. Because this would leave those connections on other cards with no destination, HyperStudio warns you if the card you are about to delete is pointed to by any other cards. At that point, you'll have the choice of also deleting the buttons on other cards that point to the card about to be deleted, or leaving them in place. If you leave them, and you delete the card anyway, HyperStudio will mark those buttons as *unresolved*, that is, they are buttons that no longer have a destination.

Any visible button that is unresolved is indicated by being shown in red on a given card. This is to make recognizing unresolved buttons easier. You can then go through your stack, and easily recognize cards with unresolved buttons, editing the buttons as necessary for the proper operation of the stack.

Cut Card: This cuts the entire card to the clipboard, with the expectation that you will paste the card into another stack, or perhaps at the end of the current stack. The card will remain on the clipboard until you choose cut or copy again from the menu.

Like Clear, if you cut a card that is pointed to by other cards, and do not paste it back into the stack, any unresolved buttons will thereafter be displayed in red.

Copy Card: This is identical to the Cut Card function, except that the selected card is not deleted from the stack. The two immediate consequences of this are that, first, there is no need to worry about unresolved buttons on other cards, since the original card remains. Second, the copied card, if pasted, is not pointed to by any existing buttons, since it will be given a new card number.

Erase Background: This erases the current background to one of the 16 colors on the HyperStudio palette. See Set Background Colors, in the Options menu.

Move Menu

This menu makes it easy to move around in a HyperStudio stack. The commands are as follows:

Back: Selecting this takes you back, one card at a time, through the last 16 cards viewed. This makes it easy to return to a card you viewed recently. This is different than the Previous Card choice below. Back goes back through the cards in the order you viewed them; Previous goes to the card that is physically in front of the current card.

Home: The Home Card is a significant point in the HyperStudio system. It is a "home base" from which different stacks, and even applications, can be used. When you quit a given stack or application, HyperStudio will always return to the Home Card.

Many stacks also have Home Card icons on various cards. Clicking on the Home Card icon also returns you to the Home Card.

First Card: Choosing this takes you to the first card in the current stack.

Previous Card: This takes you to the previous card in the current stack. If you are already on the first card in the stack, choosing this takes you to the *last* card in the stack. This is called a "wrap-around" effect. Note that both Previous and Next Card functions go to the card specified in terms of its *position* in the stack, not the order the user viewed the cards.

Next Card: This takes you to the next card in the current stack. If you are already on the last card in the stack, choosing this takes you to the *first* card in the stack.

Last Card: Choosing this takes you to the last card in the stack.

Find...: Choosing this opens a window in which you can type a word or phrase. When you press Return, HyperStudio will search through all the text items in that stack for the search word(s). Note that HyperStudio searches from *the current card forward*. If you want to search the stack from the beginning, be sure to remember to move to the first card before beginning your search.

When you do your search, you will have the option of searching just the changeable or fixed text fields on each card. You can also choose to search both. The difference in these types of fields is described in the section on the text item tool.

Once the search has begun, you can search to the next occurrence by pressing Shift-Apple-F.

Tools Menu

The tools menu is an icon-based menu with two major groups of tools. The upper group of icons represent major editing tools for screen items such as the text, graphics, and button objects. The remaining tools are all paint tools, used when editing the graphics that make up the current background.

Browse (hand): While editing a stack, you may want to click on a button to verify its action, or to move to another card. Selecting this tool gives a hand icon that is used to activate a button. This is the default tool when HyperStudio is started up, and the Home Stack is loaded.

Button: This is used to highlight invisible buttons for editing, and to move or resize both visible and invisible buttons. When you choose the button tool, all invisible buttons will be shown surrounded by rectangles. You can then use the button tool to click on a particular button to select it for dragging to a new position, or a cut, copy, or delete action. Selected buttons can be resized by dragging the corners of the button.

When a button is selected, you can choose Item Info in the Objects menu to get a description of the button, or to edit the button name and appearance if you wish.

Edit Tool (pointer): This tool is a combination of all the specific edit tools (button, graphic and text) used to select items for editing. Once selected, the item can be moved, edited, cut, copied or deleted. Once a given item is selected, you can also use the Item Info function in the Object menu for information about that object.

In general, the editing rules are as follows:

To Re-Position an Object: First, click on the item to select it. Then, put the cursor over an item, hold down the mouse button and drag the mouse to move the object to the new position. For buttons and text objects, the object can be resized by dragging the corners of the rectangle of the object. Clicking anywhere outside the window places the object in its current position, and deselects the object.

To Edit an Object: When an object has been selected by clicking once on it, it can then be cut, copied, or deleted with the appropriate option in the Edit menu.

If you want to edit particular attributes of the object, such as the name and appearance of a particular button, etc., you can select it with the edit tool, and then choose Item Info in the Objects menu, and make related choices from there.

Picture Tool: Choosing this icon will activate the tool that will let you edit all the graphic objects on the current card. You can use the picture tool to click once on a particular graphic item to select it for resizing, dragging to a new position, or a cut, copy, or delete action.

If you select the Item Info dialog box for the graphic (see the description of Item Info in the Objects menu), you can change the border type using the same dialog boxes and controls as were used when the graphic item was first added to the card.

Sound Tool: This icon shows a speaker, and is used to highlight all those invisible buttons on the current card that have a sound attached to them.

After all the invisible buttons with sounds have been highlighted, clicking once on any of them selects that button for dragging, or cut, copy or delete actions. Choosing the Item Info dialog box for a button (see the description of Item Info in the Objects menu), lets you can view and edit the button name and appearance.

Text Tool: Choose this to display all text items on the current card. Use the Text tool to click on a particular item to select it for resizing, dragging, or a cut, copy, or delete action.

If you want to edit the text in a text item, use the browse tool, and click on the item. When using the Text tool, you can choose Item Info in the Objects menu if you want to make changes to the overall appearance of the text item, or change whether it is a fixed or changeable text block. Note that disk-based (extended) text objects are always read-only.

Paint Tools

The remaining tools in the Tools menu are used for editing the background graphic image. Although the images in graphic *objects* cannot be edited directly, you can load any 640-mode Super Hi-Res screen as a background, edit it with the paint tools, and then save the screen. These saved images can then be used as either a background or a graphic item.

The paint tools are as follows:

Selector Tool: This is used to select a rectangular area on the screen to be cut, copied, or moved by dragging. When the selector tool is active, the cursor changes to a cross-hair. An area is selected by pressing the mouse button, and then dragging the mouse with the button held down. As you move the mouse, a rectangle will indicate the area to be selected. When you release the mouse button, a blinking dotted line shows the selected area. You can then choose Cut or Copy from the Edit menu. Cut and Copy each put the graphic image on the clipboard, after which it can be pasted on the current card, or any other card in the stack. If Cut is used, the selected area is replaced by whatever color is under the upper-left corner of the rectangle.

If you want to move the selected area, simply move the mouse inside the rectangle. The cursor will change to an arrow. Then hold down the mouse button while you drag the mouse. When you release the mouse button, the image will be placed at that location. The area underneath the moved rectangle is replaced by whatever color is under the upper-left corner of the rectangle.

If you change your mind about the area you have selected, clicking the mouse once outside the selected area removes the selection box. You can also click inside the selected area to deselect it, but you must be careful not to move the mouse as you click the button, otherwise the region may be moved as well.

Lasso: This is similar to the Selector tool, but is used to outline an image on a solid-colored background. After selecting the lasso tool, you draw a free-hand line around the object to be selected. When you release the mouse button, the color under the cursor when you started the lasso is used as the background color, and only parts of the image different from that background are selected with an outline.

Once selected, the item can be Cut, Copied, or moved, just as you would with the Selector tool.

Pencil: The pencil is a fine-line drawing tool that draws a free-hand line in whatever the currently selected color is. The current color is chosen from the Colors menu. With this and the other drawing tools, if you change your mind after drawing a line, just choose Undo in the Edit menu. You can only undo the very last drawing action.

Paintbrush: This tool is like the pencil, but it can draw a variety of line widths. The brush can also have different shapes, which can be used to produce different effects.

The brush shape is chosen with the Brush Shapes item in the Options menu. The current brush color is set using the Colors menu.

Eraser: This is a handy way to erase an area of the screen. It is really equivalent to drawing with a rectangular brush using the color currently set by the Set Background Color option in the Options menu.

Line Tool: This is used to draw straight lines in the current color. Lines are drawn by just pressing the mouse button at the point where you want the line to begin, dragging the mouse to draw the line, and then releasing the mouse button where you want the line to end. Notice that while the mouse button is down, you can reposition the end of the line anywhere you want until the mouse button is released.

The width of the lines being drawn can be changed using the Line Size function in the Options menu.

Spraypaint Brush: This tool paints a scattered pattern of dots in the current color. By moving the pattern over an existing image, you can create variations in shades, or just add interest to the overall pattern.

Rectangle: This draws a rectangle in the current color, with a border of the current line width. Press the mouse button to start drawing, and release the button when the rectangle is the desired size.

You can also draw a solid rectangle by choosing the Draw Filled item in the Options menu. When this is active, there is a checkmark next to the menu item, and the rectangle tool will draw solid rectangles in the current color.

Rounded Rectangle: This is identical to the rectangle tool, except that the rectangle drawn has rounded corners. As with the rectangle tool, the shape is drawn using the current color and line width. If Draw Filled is active, a solid shape is drawn.

Fill: The tool icon for this represents a paint can pouring paint. This is used to fill an enclosed region with a solid color. The active part of the fill-cursor is the very tip of the black area on the cursor that represents the paint pouring out. The fill also uses the current color. The main thing to be careful of when using the fill tool is to make sure that there are no "leaks" in the area you are about to fill. However, in the event the fill does cover a larger area than you intended, you can choose Undo to restore the original image.

Oval: This is similar to the rectangle tool, except that it draws an oval shape in the current color and line width. When you first press the mouse button, that point represents the upper left corner of an imaginary rectangle that contains the oval being drawn. The point at which you release the mouse button represents the lower right corner. If you want a solid oval, use the Draw Filled item in the Options menu.

Freehand Shape: This tool draws a closed free-hand shape using the current color and line width. When you release the mouse button, a final line will be drawn from the end point to the starting point, if you have not already closed the curve. If you want a solid shape, use the Draw Filled item in the Options menu.

Text: This is used to add text to the background image. *This is not the same as adding a text item!* A text item is an independent object that can be moved and edited at any time. The *painting* text tool, on the other hand, simply prints the text you type on the screen, at which point it becomes part of the background.

When you choose the text tool, the cursor changes to an I-shaped cursor. To type text, position the cursor where you want to start typing at, and click the mouse once. The positioning cursor will then disappear, and you'll see an insertion-cursor at the point where you are typing.

The color of the text is controlled by the choice set in the Set Text Color function in the Options menu. This will generally look best if the color is simply black or white, but will also depend on the background color as well. While you are typing, you can use the Text Style item in the Options menu to change the type style of the text that is being entered. However, once you click the mouse in a new location, or choose another paint tool, the text will be merged into the background image, and can no longer be changed. **Note:** When typing text on a background that is neither black nor white, larger text sizes (see the Text Styles... choice in the Options menu) will produce better results.

Magnifying Glass: This is a special mode for magnifying the image within a given area on the background, and allows you to edit the screen dots pixel-by-pixel. This is also sometimes called either a "fatbits" or "zoom" mode.

When you first select this item, a rectangle will appear on the screen that represents the area to be magnified. Use the mouse to position the rectangle over the area you want to examine, and then click the mouse button. You will then see a magnified image, with a normal view of the same area in the upper left corner of the screen. The paint tool at that point is the pencil, and you can re-draw any point you wish in the current color.

You can use the Colors menu to change colors. You can also "pick up" a color from the current magnified view by holding down the Apple key, and clicking on the new color. While you are in the magnified mode, if you want to scroll the screen, you can hold down the Option key. The cursor will change to a hand, and dragging the mouse will move the magnified image in the same direction as the mouse movement.

Using any other paint tool, or clicking the mouse in the normal view window will exit the magnified mode, and return you to a normal view.

If you have used the magnified mode once already, then selecting it again will automatically start the selecting rectangle at the old position, although you can still move it to a new position with the mouse if you wish.

Polygon: This functions lets you draw a closed polygon shape, using the current color and line width. When you release the mouse button, it will complete the shape by drawing a final line from the end point to the starting point, if necessary. If you want a solid shape, use the Draw Filled item in the Options menu.

Objects Menu

This menu is used to add and edit objects on a given card. It also provides information about the memory used by the current background, card, stack, and a given object.

Item Info: To use this, first select an object on the current card, using either a specific tool (like the buttons, text, or graphic tool), or the edit tool (the pointer). Then choose Item Info from the Objects menu. Depending on the actual item you have selected, the information reported will be:

Button Info: This reports the name of the button. Even invisible buttons can be given names. Whatever text is entered on the edit-line when the button is created is used for the button name. Names are not only used for visible buttons, but are written out to the disk as part of the HS.Test.Results file for both visible and invisible buttons, if the given stack is a test function stack. The dialog box also provides an easy way of changing the button style.

There is also an entry for "Button ID". The value for Button ID is a number used by HyperStudio to keep track of all the buttons in a given stack. It is provided for reference only, and it is unlikely that you will ever need to use it.

Buttons actions cannot be directly edited (since redefining the actions would take just as long as creating a new one); to change a button action, use the Button tool to select and delete a button. Then create a new button to do what you want.

Text Info: This dialog box tells you whether a text field is scrollable or not, whether a scroll bar will be drawn for the text item, whether the text is read-only (not changeable by the user), and whether a frame will be drawn around the text item. Which features you use will depend on the nature of a given text item. For example, if you were creating single-line entries, such as an address book, etc., you would want each field to be non-scrolling, without scroll bars or a frame.

Graphics Info: This reports whether a given graphic item is embedded or disk-based, how much memory it uses, and lets you change the border size.

Card Info: When this is chosen, a dialog box appears that identifies the position of the current card in the stack, how many buttons, sounds and graphics are on that card, and how much memory is used by that card. The memory-required value is to the nearest 1K, and may read "0" if the card uses less than 1000 bytes of memory.

Background Info: This displays a dialog box that shows how much memory within the stack the current background uses, and how many cards in the stack use that background. Note that backgrounds are always contained within the stack itself. When the background is stored in the stack, it is compressed to minimize the amount of memory required.

Also, when a new stack is created, the background memory use will read 32K until the next card is created, or the stack is saved. Once compressed, Background Info will display the correct value.

Stack Info: This displays a dialog box that provides information about the entire stack. Information shown includes the size of the stack itself in memory, how many backgrounds are used by the stack, how many cards are in the stack, and other useful facts.

Bring Forward: Use this when two objects overlap, and you want the selected item to be on "top". Not all objects can be arbitrarily stacked. For example, text items are always "in front" of graphic items. Items of the same type can be adjusted relative to one another.

Send Behind: Use this when two objects overlap, and you want the selected item to be on "the bottom".

Adding Objects to a Card

Add a Button: Choosing this menu item tells HyperStudio that you want to add a new button to the current card. When chosen, you'll be shown a dialog box that lets you choose from among different button designs. At the bottom of the dialog box is a line with a blinking cursor. This is where you can enter any text that you want displayed within a visible button when it is displayed on the screen. If you don't want any text on the button, just leave this field blank. After you have chosen the button style you want, click on OK.

The first time that you add a button, HyperStudio will remind you to position the button, and then click outside the button when done. Click on "Continue" after reading this dialog box. You can use the mouse to drag the button to whatever location on the card you wish. When you have placed the button where you want it, click anywhere outside of the button to "drop" it at the current position.

If you have selected the "Invisible" button, you'll get a dotted line rectangle indicating the "hot area" for that button. Use the mouse to position the rectangle over whatever portion of the screen you want to act as a button. You might, for example, put a rectangle over a picture of an arrow to use as a button. When positioned, click anywhere outside of the rectangle. You can resize the button area by dragging any of the corners.

Button Actions: When you have positioned either the standard or invisible buttons, the next step is to specify what action you want taken when the button is activated. A dialog box will appear that has two major groups:

Connect To... This allows you to specify where to branch to when the button is activated. The choices are:

- **Another Card:** Choosing this will connect the button to another card in the stack. When you select this, you'll be temporarily returned to the current card, and a window will be displayed that says "Move to the card that is the target of this button. Click OK when the proper card is displayed. You can now use any of the usual HyperStudio Move menu commands, (or even existing buttons on a card), to move to another card in the stack. When you find the card you want the button to connect to, just click the OK button. You cannot connect to a card in another stack. Use Connect to Another Stack for that.

- **Next Card:** This will automatically link the button on the current card to the next card in the stack. Note that this connection is specifically to the next card. That is, if at some point in the future you delete the target of this button, this button will not go to the new "next card", but will be unresolved since its actual target card is gone.

- **Previous Card:** This is similar to Next Card, but instead creates a link to whatever card is currently in front of the current card.

- **Another Stack:** You can also connect a button to an entirely different stack. When you choose this item, you'll be presented with the File Interface, with which you can specify the stack that you want to move to when that button is activated. There is no particular limitation on the destination stack. That is, you can specify stacks in other directories, or even on other disks. If the required disk or directory cannot be found when the button is pressed, the user will be prompted to locate the required files.

Note: HyperStudio always looks first in the current directory for a given stack, graphic, sound, application, or any disk-based item. Thus, you cannot connect to another stack in a different directory if a stack with the same name exists in the same directory as the active stack. Also, if you have a stack or application in one folder, and then move it, the connection will no longer work because the target has moved. One way around this is to put the target stack or application in the same folder as the branching stack. Then the connection will always work, no matter where the total group of stacks and applications is located.

- **Connect to Application:** A button can also start an application. For example, you could have a button start up AppleWorks, or any other application. When that application quits, it will automatically return to HyperStudio. The application to be run is selected with the File Interface. After you have selected the application, a dialog box will appear that asks whether you want to return to the current card, the first card in the current stack, or the Home Card when the application finishes. You can also elect to not return to HyperStudio at all, but rather whatever program selector was used to launch HyperStudio, for example, the Finder.

Transitions: In each of the Connect To... actions, you also have the choice of a visual effect, called a *transition*. A transition is a special screen effect that makes the movement from one card to another more visually interesting. After choosing one of the above items, you also can choose one of 16 transition effects. The fastest transition is the default one, labeled, coincidentally enough, "Fastest". Other effective transitions are the fade-to-white and fade-to-black. In

addition, there are what are called *screen wipes*, which change one screen into another with an interesting effect. The best way to understand what these do is to experiment with them.

Actions... When a button is pressed, there are actions other than (or in addition to) branching to another card, stack or application, that are possible. These choices are also indicated:

- **Play Sound:** You can have a sound play when a button is pressed. If you choose this action, you will be asked whether you want to use an existing sound file on disk, or use the "live record" mode.

Adding a Sound from Disk: If you choose to use an existing sound file, then you'll be shown the usual File Interface, from where you can choose a sound file.

Once you have selected the sound file to use, HyperStudio brings up a screen with a picture of a tape recorder. There are also controls for playing the sound, and setting the playback volume level.

At this point you would click on the Play button to verify that this is the sound you want to add, and that the volume is satisfactory for your application. In the Preferences dialog box (Apple menu), the user can set their own volume level, but this will help set the volume of the current sound sample in relation to the others.

Once the sound is played the way you want it, simply click on the Done button. If you have the Preferences set to Advanced User, you'll then be asked about the data access method. Otherwise, you'll just go back to the normal HyperStudio program operation.

Note: If you have sound files from other systems, you should first load them in the Sound Shop program, and then save them back to disk in the Sound Shop format. This is because most sound files from other companies do not contain any information about the playback rate and volume setting, and more importantly don't have a "signature" that clearly identifies what system they were created on. Without these values, it is unlikely the file can be played directly by HyperStudio with the desired volume and playback rates. The solution is to first load the sound file in Sound Shop, and to then save the file back to the disk. Sound Shop uses an "official" Apple filetype, and includes the information about the playback rate, volume, etc. in the sound file. These values, in turn, are automatically used by HyperStudio when using the sound file in a stack.

- **Play a Video:** A button-press can also trigger the appearance of a video sequence generated by a Pioneer 2200, 4200 or 8000 LaserDisc player attached to the Apple IIGS. This does not control VCR players, or other video sources (see the Live Video demo in the Xcmds folder if you have an Apple II Video Overlay Card (VOC), and want to experiment with video in HyperStudio).

The Pioneer 4200 is attached to the Apple IIGS modem port, using a simple modem cable with the proper connectors on each end. You must make sure your "Slots" setting in the Control Panel has Slot 2 set to "Modem", and the "Modem" setting is set to 4800 baud.

When you select this, you'll first be asked if you want to show video in the screen border. This is only available with the VOC, and is used if you want the video image to completely fill the monitor. After making your selection, a LaserDisc Control box will appear on the screen. If you have the VOC, a rectangle will also appear in the center of the screen. This represents the area where the video image from your video will be displayed on the screen.

If you have the VOC, HyperStudio will then display a rectangle, with handles, that can be resized and positioned as you wish. This rectangle determines exactly what portion of your video image will be displayed on the card. Changing the size of the rectangle does not shrink the entire video image into the new rectangle. Rather, this is just a "window" onto the video image produced by the videodisc player.

If you don't have the VOC, you can still use HyperStudio to bring up a given image or sequence in connection with any particular card. If there isn't a VOC in the computer, HyperStudio will display the remote-control box on the screen, but will not put a rectangle on the screen. In this case you would use a second TV or monitor to display the output from the videodisc player.

A video sequence is defined by specifying the beginning and end frame numbers of the video to be shown when the current card is displayed. The radio button starts on the "Begin" setting. Click on the Play or Step buttons to find the beginning of the sequence you want to use. If the disk is Playing, clicking on Step or Pause will stop the disk on that frame, and update the frame number register with the current frame number. You can also press the Clear key on the Apple keyboard, and enter a new frame number. The player will then jump to that frame. To set the ending frame, click on the "End" radio button, and then click on Play to let a few seconds of video roll by. If you want to show only a single frame, just set the End frame # the same as the beginning. Frame numbers can be entered manually, and you can use the TAB key to switch between the Begin and End frame boxes. When you enter a number in a box, the radio button will automatically move to that box.

You can test your video by pressing the Test button. When you get the sequence you want, just click on the Keep button.

That's it! Now, whenever this button is pressed, the video sequence will be shown. A video sequence is only played once when the button is pressed. If you want a video sequence to repeat at regular intervals, or after a set time period, see the discussion on setting the time period for an "Auto-activate" button, which is described later in this manual.

A video sequence can also be attached to a given card, so that the video sequence is shown as soon as the user moves to that card. See the Add a Video section later in this manual.

Other LaserDisc Control Features:

While you are defining the video sequence, there are a number of features in the LaserDisc Control box that you should be aware of:

Play: You can play either forward or backward by clicking on the arrow buttons to either side of the word "Play". If the End frame number is less than the beginning frame number when you finally choose "Keep", then the sequence will be played backward.

Sound: By clicking on the button normally marked "Stereo", you can switch the sound off ("silent"), or select either the left or right audio channels. Sound is not available at playback speeds other than Normal.

Playback Speed: By clicking on the buttons to the left and right of the word "Norm", you can change the speed at which the video is playing. Faster speeds available include 2x and 4x. Slower speeds include half-speed down to 1/16 speed, and two special "slide show" modes of one frame every 1 or 2 seconds. The speed used when the video sequence is seen by the user will be whatever the speed value is when you finally click on "Keep". Thus, you can use the faster speed settings when finding the frames you want. Just remember to set it back to "Norm" before clicking on "Keep" - that is, unless you deliberately want a different speed in the playback.

Chapter Mode: If you click on the buttons marked "Fm", to the right of the frame number indicators, the button will change to "Ch" (for "Chapter"), and the number display will show what chapter that frame number is found in. If you click on the frame box while in the chapter mode, the LaserDisc will seek to the beginning of that chapter.

Display: If you are in the full-screen mode, and have an active show-through area in the upper-left corner of the screen, then the current frame number will be displayed. Clicking on the Display button toggles the display between on and off.

Step: Clicking on either side of the word "Step" will move one frame forward or backward.

Start/Reject: If the LaserDisc player is not fully started when you bring up the LaserDisc Control, then the button in the upper-left corner of the box will read "Start". Click on this to start the player if the other controls in the box are not yet visible. Once the player starts, this button changes to "Reject", and will eject the disk if pressed.

Creating a Full-Screen Video

In normal use, the video image (with the Apple II Video Overlay Card) will only show through the region defined by the video rectangle used when Adding a Card Video. However, the Video Overlay Card works by defining a color as the "key-color", or "show-through color" on

the screen. Before a video is added to a card, the key color is purple. The purple hue on the screen changes to a pure blue once a video object has been added to a card.

There are two degrees of "full-screen" on the Apple IIGS. The first is the active screen area, excluding the border area. The larger full-screen includes the monitor border area as well. You can design a card to use either method.

If you want to create a video image that fills the entire background of a card, you can do this by painting the entire card background with the proper show-through color. The color to choose for filling the background will either be purple or blue, depending on whether a video has already been added to a given card, but its position in the color table will always be the same: color #6. That is, in the "Colors" menu, choose the second color from the left in the second row from the top. If you are using the "Set Background Color" menu option (Options menu), use the 6th color choice from the left.

When your video image is displayed, the video will be seen across the entire screen, regardless of the actual video rectangle. In most cases, you'll find it easier to just make the video rectangle as small as you can, and then move the video rectangle to some out-of-the-way spot on the screen (but still over an active video show-through area).

If you want the video image to fill the screen border area as well, then click on "Yes" when first adding a video, when you see the dialog box asking if you want to show the video in the screen border area. The only real difference between these is that HyperStudio changes the GS border color to the "key-color". This will allow the video image to go to the absolute edge of the monitor screen.

The advantage of using the background graphic itself (as opposed to the video rectangle) for the video show-through area is that it is easy to re-paint a rectangle or other area if you want to change the image area. In addition, you can use the Add clip-art, or other paint tools, to overlay labels, arrows, or icon-buttons onto your video image. You should also try drawing some rectangles, with "draw filled" checked in the Options menu, in various colors. You'll notice that colors range from completely transparent (blue) to completely opaque (black, white, grey, and shades of red), and others are in-between. This can create very neat effects that show a dimmed image of a larger video image, with a certain part "highlighted" by being 100% transparent, and thus brightest.

The real key here is to just experiment. You can't hurt anything, and you're likely to discover many useful techniques in the process. Also remember to experiment with using the paint tools to create small windows with video showing through. We've found that although the video rectangle is the easiest to explain and use for beginning users, in the long run, using the paint tools will give the most flexible results.

• **Trigger Xcmds:** This is an advanced feature of HyperStudio that is available to those people who want to extend the functions of HyperStudio beyond the built-in features.

When you choose this option, a dialog box appears that prompts you for the text which will be passed to an Xcmd. What you enter, if anything, depends entirely on the Xcmd being called.

Here's an overview of the Xcmd system:

When any given stack is opened in HyperStudio, the same directory that the stack was in is checked for a file named HS.Xcmd. If found, that file is also loaded into memory. Then, whenever the user clicks on a button that has been given an Xcmd function, HyperStudio passes control to the file (HS.Xcmd) that was loaded, and passes it the text that was entered for that button as well.

Examples of Xcmds are included on the HS.Demo and HS.Art disks. For example, although HyperStudio has a menu choice for finding text in a stack, suppose you wanted to create a button which, when pressed, would jump to a card that had a pre-defined phrase of text on it. The demo "Find.Demo" in the Xcmds folder on the HS.Demo disk (click on Find Demo in the Home Card) shows how this might work. You could put this function in your own stacks by moving the file HS.Xcmd from the Find folder on the HS.Demo disk to whatever folder had your own stack in it. To define the Find Xcmd button in your own stack, you would then just create a new button, and choose Trigger Xcmd as the Action. You would then enter the text to be searched for whenever that button was pressed.

Another example on the HS.Art disk is an Xcmd for displaying a single full-screen 320-mode picture in a stack. See the demo Test.320.Stack in the Test.320 folder on the HS.Art disk. In this Xcmd, you simply enter a number when creating the button that tells HyperStudio how many 10ths of a second to pause between each picture in a slide show. Entering a value of 10 would pause 1 second. To show a single 320-mode graphic, you simply put the HS.Xcmd file from the Test.320 folder in the same folder as your stack, and then put a single 320 mode picture in the directory with it. See the Test.320.Stack for more information.

The HS.Demo disk has assembly language source files for those interested in pursuing this area further. Xcmds can also be written in other languages like Pascal, so long as the language can create stand-alone OMF load modules (such as NDAs) on the Apple IIGS.

• **Animate:** This is actually somewhat similar to Adding a Graphic (see later). The difference here is that you can attach the appearance of a graphic, and its animation, to a button-press. Choosing the Animate action will take you through a sequence which is the same as though you were adding a graphic.

Some (but not all) graphic programs offer animation functions. Paintworks Gold and BeaglePaint support an animation format where many different frames can be combined into one file to make up an animated image. The animation is created with a series of Super Hi-Res

pictures, with filenames that are numbered. An animation sequence for a bouncing ball might consist of the files BALL01, BALL02, BALL03, etc.

When you choose Animate from the actions menu, you go through a process similar to adding a graphic object. The choice of disk files will include not only the usual graphics, but also animation files (type \$C2) from PaintWorks Gold. If you choose a filename that ends with a number, the disk is checked for additional files that continue the sequence. For example, if you used the file BIRD1 as a graphic item, HyperStudio would automatically look for the files BIRD2, BIRD3, etc., until it ran out of files.

After choosing a file, a window will open that shows the first frame of the animation. Only the part of the graphic visible in the window you create is displayed during the animation sequence, and if anything in your animation moves outside this area, then it will not be visible. Clicking outside the rectangle drops the graphic in place, and you'll be returned to the button action dialog box. If the graphic you have specified is part of a numbered series of frames, HyperStudio will generate the animation before returning to the Actions dialog box.

In the Actions dialog box, you should enter a Rate and Repeat Count. The Rate is counted in 60ths of a second, and controls how fast the animation runs. Thus, a value of 30 would be two frames per second. The Repeat value controls how many times the sequence repeats itself.

When an animation plays, it may clear an area slightly larger than the actual rectangle you defined. This has to do with limitations in the method used by PaintWorks Gold.

Test Functions

On any card, buttons can be either "No test function" (the default), "Correct Answer", or "Alternate Answer". Normally, when you are creating buttons to go to other cards, etc., the setting is "No test function". Buttons created this way are neutral, and have no effect on the test status of a stack or card.

If you elect to make any button in a stack either "Correct Answer" or "Alternate Answer", that stack is now considered a "Test stack". When a stack is quit, either by quitting HyperStudio, launching another application, or branching to another stack, HyperStudio writes to a text file on the disk, in the same directory as the stack, named HS.Test.Results. The information written includes the stack name, the time and date, a list of which buttons were chosen on each card in the stack, and a final "score" for that stack. Information is written to the HS.Test.Results file on a cumulative basis, so this one file contains the results of all stacks in that directory that are used until the file HS.Test.Results is deleted. The HS.Test.Results file is not written to if there are no test function buttons in a given stack.

The results for a given stack are calculated as follows:

When the stack is terminated, and the HS.Test.Results file is written, HyperStudio scans the entire stack to see what buttons were pressed as the stack was being used. For each card, it writes out the card ID#, and which button on a card was the last one clicked on. If no button on that card was clicked on, or if the button clicked on was a "No test function" button, then no entry is written for that card.

If the last button clicked on a given card was defined as either "Correct Answer" or "Alternate Answer", then HyperStudio will record the button name as the chosen button for that card. The final score will be the number of "Correct Answer" buttons chosen (maximum one per card) compared to the number of total cards with test function buttons on them.

There can be as many Correct Answer, Alternate Answer, or No Test Function buttons on a given card as you want; only the last button clicked on is used in recording the results.

This actually is a fairly simple and straight-forward system, but you may want to experiment with different kinds of stacks and button combinations to see what works best for you. Different possible setups include:

- A simple multiple-choice test stack, where each card is one question. Each possible answer button moves you to the next card. Correct Answer buttons are defined as appropriate; Alternate answer buttons are used for the others.
- A variation on this is to include forward and backward arrow buttons on each card, defined as No Test Function. Clicking these will not affect the "last button clicked" status on any given card. That is, you could click on a choice (perhaps that responded with a voice confirmation), and then click on the forward button. HyperStudio would still record the button chosen, and would ignore the forward button.
- A timed test, where each screen also includes an auto-activate button that moves to the next card after 10, 20 or 30 seconds (or whatever). The user would have to choose one of the possible answer buttons in the allotted time period. The final HS.Test.Results file would record which button on each card had been chosen.

To use the test results, you should load the HS.Test.Results file into a word processor. It is also possible to write simple Applesoft programs that will read the file, and organize the data, but this is a custom application that depends on your own time and interests. You could also specify the file HS.Test.Results as the source of a text item in another stack, using the extended data access method.

The test functions can be used not only for the classic sort of tests, but also for user profiles as well. Imagine a stack that begins with a picture of three bowls of ice cream. Each of the bowls is set up as an invisible button, each named "chocolate", "vanilla", and "strawberry". At

the end of the stack, the HS.Test.Results file will create a file that tells you which button they selected. In this case the "Correct" or "Alternate" answer attribute for a button doesn't matter (although it must be one or the other). What you're getting is the information about which item they chose on a screen. If 100 people were to use this card in a stack, then the HS.Test.Results file would contain a survey of 100 people, and a study of the percentage of what flavor ice cream was preferred.

Auto-Activate Buttons

Normally, a button has to be clicked on by the user to be activated. Suppose, however, that you wanted a sound to play immediately when a card was displayed. How could you do this?

The answer is with auto-activate buttons. An auto-activated button "presses itself" after a set number of seconds after a card is displayed. The button can also be set to continuously cycle in the time period set. To set up an auto-activate button, just check the auto-activate box, and enter a time (in seconds) after which the button should activate. If you want the button to repeat its action, check the repeat box also.

Another use for Auto-activate buttons is to prompt the user if they don't click on something on the screen in a certain amount of time. This could be a help card, or it could also be used to create timed tests.

Auto-activate buttons are not active (at least not self-timed) until you turn on the Auto-activate function in the Preferences dialog box, *and* you are in the browse mode. This is so that you don't have to worry about auto-activate buttons going off while you're trying to edit other parts of a card. Auto-activate buttons are automatically turned off when you select a paint or editing tool, and are not turned back on until you select the browse tool and move to another card, or turn on Auto-activate in the Preferences menu.

Adding Other Objects, Continued...

Add a Graphic: This menu item is used to add a graphic object to the current card. When you choose this, you will be presented with the File Interface for choosing the graphics file you want to use. Once the graphic has been selected, and if this is the first graphic you have added since starting up HyperStudio, you'll get a dialog box explaining that the next step is to size the graphic to the size you want, and to position it on the card.

Remember when adding a graphic to a card that the graphic retains its own identity as an object on the card. This is in contrast to just adding a portion of a graphic screen as clip art. This feature is best used when you have many cards with an identical background. If you are just adding some graphics to a card, it is better to use the Add Clip-Art function in the File menu.

After you have chosen a file on the disk, a rectangle is displayed that shows a portion of the graphic screen you selected. You now have to decide how much of the image you want displayed on the card, and where you want the graphic located. By putting the mouse anywhere *inside* the rectangle, holding the mouse button down, and then dragging the mouse, you can move different parts of your graphic image into view. If you want to re-size the rectangle, use the mouse to grab any of the handles on the sides or corners. Dragging any part of the frame that is not a handle will move the entire rectangle to a new position. Remember that the window "frame" is only shown so that you can size the window, and scroll the image area. Once positioned on the card, the window frame is not shown unless you edit the graphic again.

When the graphic has been positioned and sized, click anywhere outside of the box to indicate you are done positioning the graphic. You'll then be shown a choice of borders that you can use for the graphic. If your graphic is a picture that is very different from the background, you'll probably want to use a border. On the other hand, if you want the graphic to look like it is a part of the card, and presuming that the background in the graphic is the same color as the background on the card, then you can use "No Border".

Unless you have the Preferences option set to Advanced User, you're now done, and you can go on to your next operation in HyperStudio. If you have set the Advanced User option, you'll then be asked to set the data access method. See the section on the Advanced User option for a detailed discussion of the choices.

Add a Text Item: If this is the first text item you have added since starting up HyperStudio, you'll get a dialog box explaining that the next step is to size the text box to the size you want, and to position it on the card. Successive text file selections proceed the same; they just aren't preceded with this "help" box. After clicking on "continue", a rectangle is displayed that shows where the text rectangle will be placed on the screen. You can resize and reposition this rectangle, just as you would an invisible button. Drag the center of the rectangle to reposition it; drag the corners to resize.

When the text item has been positioned and sized, click anywhere outside of the rectangle to indicate you are done positioning the rectangle. You'll then be shown a dialog box that gives you the options of using scroll bars, a rectangle around the box, and whether the text item will be changeable by the user or not. You can select any of these attributes as needed.

You also need to decide if you want to use text from a file already on disk, or if you want to enter text directly.

• **Using a Disk Text File:** If you choose to use a file from disk, you'll be presented with the File Interface for choosing the ASCII text file or AppleWorks 2.1 word processor file you want to use. The text file will then be loaded, and the text will appear in the rectangle.

Remember when adding a text item to a card that, like the graphic item, it retains its own identity as an object on the card.

After you have chosen a file on the disk, if you want to resize, reposition, or change the attributes of the text box, you can use the text tool in the Tools menu, select the text item, and then choose Item Info from the Objects menu.

Unless you have the Preferences option set to Advanced User, you're now done, and you can go on to your next operation in HyperStudio. If you are using the Advanced User Options, you'll be able to decide whether to imbed the text in the stack, or to use the extended (disk-based) data type. See the section on the Advanced User option for a detailed discussion of the choices.

• **Entering Text Directly:** After choosing "Add a Text Item" from the Objects menu, if you then choose to enter the text, you'll go immediately to the text box on the screen, where you'll be able to enter text directly. Text is entered in the Browse Mode, so you can go on to another activity at any time. There is no particular action required to end entering text.

As with text items created from a disk file, you can always use Item Info in the Objects menu to resize, reposition, or change the attributes of your text item. Text in the text objects is always in the Shaston 8 typestyle. If you want to put text on a card in other sizes and styles, such as for titles, etc., you can use the text paint tool (Tools menu).

Add a Video: In this menu item, the procedure is identical to that for adding a video sequence to a button. The only difference is that the video will be added to the card itself, and will be played when the user first moves to that card. See the description of playing a video on a button-press for additional details.

Colors Menu

This menu is used to set the current color for the paint tools. HyperStudio uses 16 standard "dithered" colors in the 640 Super Hi-Res mode of the Apple IIGS, plus 16 additional pattern-type colors, for a total of 32 usable colors. You can load pictures created with other paint programs that have custom palettes, but you must use some care in using these graphics on a card. The main problem is that the custom palette may interfere with the appearance of the menu bar, or other buttons or graphics on the screen. Full-screen backgrounds with no menu bar, and invisible buttons, generally work best for custom-palette graphics.

You can also use the Add Clip-Art function to set the current card to a custom palette. Just choose Add Clip-Art in the File menu, and load a graphic that has a palette you would like to use. Now, clip a small part of the graphic, and paste it onto your current card background. This will change the palette on that card. If you want, you can then cut the bit of graphic back out of your card if you don't want to use the image itself. The HS.Art disk includes several files, including Colors.Greys and Colors.Earth that can be used in this way to set the palette for any given card using the Add Clip-Art technique.

Options Menu

This is used to control the operation of other functions in HyperStudio, in particular the paint tools.

Line Size: This sets the width of the line to be used by the straight line, rectangle, rounded rectangle, oval, and polygon tools. When you choose this item, you'll get a dialog box that shows a number of different line sizes. Click on the one you want to select a given size.

Brush Shape: This chooses the brush shape to be used by the paint brush tool. When you choose this item, you'll get a dialog box that shows the different brush shapes available. Click on the one you want to select.

Draw Filled: Choosing this item places or removes a checkmark that indicates whether the shapes drawn with the rectangle, rounded rectangle, oval, irregular region and polygon tools will be filled with the current color or not. A checkmark indicates that these shapes will be drawn as a solid shape.

Text Style: When either using the painting text tool, or editing a text object, this menu item selects the current font, size, and style of the text being used. The fonts available will depend on what fonts you have in the Fonts folder on your startup disk. This does not have any effect on the text in a text object. Text objects are always in Shaston 8.

Set Text Color: This is used to set the color used when you type text with the text tool in the Tools menu. This does not have any effect on the text in a text object.

Set Background Color: This is used to set the background color used when you erase a background, or use the eraser tool in the Tools menu.

Hide Items: Ordinarily, any particular card would have not only the background visible, but also any graphics, text items, buttons, etc. This option lets you hide items, in case you want to use the paint tools on the background without objects in the way.

Hide Menu: This is used to hide the menu bar on a given card. If the menu bar is hidden when you move off a card by using a button, then the menu bar will also be hidden when the user views that card. This allows you to create stacks without a menu bar. Press Apple-M to restore the menu bar.

Apple Menu

The Apple menu has an "About..." box that tells you the version number of HyperStudio. However, the most important function in this menu is the Preferences choice.

Preferences

The preferences settings are saved in each individual stack, and may vary between stacks. The stack must be saved back to the disk after changing preferences if you want the changes to be in effect the next time the stack is used. Preferences lets you control many aspects of a stack's operation:

Password: This is to keep users from changing the preferences in a stack you have created. The main thing protected by the password is access to the "Lock Stack" setting (see below). If the password field is blank, then all the options are available when Preferences is chosen. However, if you enter a password and exit the Preferences dialog, and then save the stack, this password will be required the next time the Preferences dialog is opened. You'll also notice that pressing Return is not required when entering the password. When the last letter of the correct password is typed, the dialog box options will instantly become active.

Advanced User: This is used to tell HyperStudio that you would like more control over how the data for objects on each card will be stored and accessed. Normally, HyperStudio embeds the data for each object that you add right into the stack that you are creating, without asking you how you want the data accessed. This is less confusing to a new user, and creates fast and easily transportable stacks. However, if you have set the preference to Advanced User, you'll then be given some options about how you want the data for objects to be accessed by HyperStudio.

From then on (or until you change the Advanced User Option to "off"), whenever you add a graphic, text object, or sound, at the end of the process you'll see a dialog box asking you to "Select the Data Access Method for this Item:"

The two choices are "Embedded (In the stack)", or "Disk Based". Here's what these choices refer to:

- **Embedded Data:** When you add a graphic, sound, or text item to a card, the default is to actually store the data for that item within the stack itself. This is both convenient and gives faster movement between cards in your stack. The other advantage of this method is that your stack is very transportable. That is, since everything that makes up that stack is within the file itself, moving the stack from disk to disk is as simple as copying a single file. This type of object is also called an *embedded data* object.

However, suppose you wanted to create a stack that used literally hundreds of graphics, text, and sound items. Even with megabytes of memory, you would soon want to have more data in

your stack than could actually fit in the computer's memory all at once. It is also possible that at some point in the future, you may want to access data, such as that on a compact disk or laser videodisk, that *cannot* be physically imbedded in your stack.

- **Disk Based Data:** In all of these cases, HyperStudio provides an alternative way of accessing text, graphic, and sound items. The second choice, Disk Based access, gives you the option of leaving the graphic (or other) file in its current location, and having HyperStudio go back to that location whenever it needs the graphic. This is called an *extended data* object. Although this gives a slower transition time between cards, it significantly increases the overall size of the stack that you can create, and the data it can access.

The second advantage of the extended data type is that other users of the system can update the data displayed on a card *independently* of HyperStudio. For example, you might have a drawing on a card as a graphic item that showed the fire exits to new employees. If for some reason the fire exits were changed, by updating a single document - the graphic picture - *all* stacks that referenced that illustration would be automatically updated as well. This is a very powerful concept, and works well in situations where the computers are operating on a network.

As an aside, this also makes the instant distribution of all kinds of information possible. This could include memos to staff, names in an organizational chart, instructions to students, or often-changing data like price quotes, etc.

The default in HyperStudio, when shipped, is to always use the embedded data system. This means the user has less to worry about, and stacks are easy to move and operate. On the other hand, as an advanced user, you may want to take advantage of the alternate data access method.

Also, when Advanced User is set, you will not get the small instructional dialog boxes the first time a button, text or graphic item is added.

Auto-activate buttons on: In the manual, auto-activate buttons are described as those buttons that activate themselves after a set amount of time. While editing a stack, however, you may not want the auto-activate buttons going off while you're trying to work on a card. By turning off the check-mark in this option, auto-activate buttons will not be triggered unless you manually click on them. When you are ready to save your stack for the final user of your information, set the check-mark in this box, and save your stack to the disk. Auto-activate buttons are automatically turned off when you select a paint or editing tool, and are not turned back on until you select the browse tool and move to another card, or turn on Auto-activate in the Preferences menu.

Lock Stack: If you are designing stacks for use by others, and in particular, situations where you don't want the user to be able to use the editing tools, you can select "Lock Stack" in the Preferences menu (remember to save the stack after making the change). Unlocking the stack restores the complete menu bar. Since the Lock Stack option is available via the Preferences function, it is advisable to always set a password if this option is going to be used.

Show card number in menu bar: When this is enabled, you will see the number of the current card displayed in the right side of the menu bar. This is useful when creating and editing stacks, although you'll probably want to turn this off when the saving the stack for the final user.

Erase background on new card: When this is checked, HyperStudio erases the background when "New Card" is chosen in the Edit menu. However, if you are using a background, like a notebook page, that will be used on many different cards in a stack, then you will want to make sure this option is not checked (turned off). Now, when you choose New Card, the current background will automatically be used by the new card. Since there may be no visible sign a new card has been created, you will probably want to have "Show card number in menu bar" turned on.

Remember that when a background is duplicated for a new card, the background is actually shared between two or more cards. This can have significant memory savings, *but only if you don't alter the background on duplicated cards with the paint tools*. You can alter the primary card with the original background (with duplicated results!), but if you paint or otherwise edit other cards, the background will become an original background on the edited card.

Use TouchWindow: This option lets you use HyperStudio with the TouchWindow from Edmark Corp. This is a very useful add-on with HyperStudio, and lets you use your stacks with very young children, and anyone who is new to computers. Touching the screen becomes equivalent to clicking with the mouse with the TouchWindow, and makes for a very pleasant computer experience.

When you check this box, and then click on Ok in the dialog box, it is assumed that you have a TouchWindow currently attached to your computer. At that point, a dialog box appears explaining that the TouchWindow will need to be calibrated by touching each corner of the active screen area (this does not include the monitor border area). Once activated, the TouchWindow will stay active until you exit HyperStudio.

This function is *not* stack-specific, and when HyperStudio is run again, the TouchWindow will have to be re-activated and calibrated. This does not have to be repeated for different stacks. If the TouchWindow calibration is not correct the first time you do it, you can re-calibrate by turning off the TouchWindow in the Preferences menu. Exit Preferences, and then choose it again and turn the TouchWindow back on. You'll then be able to re-calibrate the screen. When calibrating, try to not drag your finger as you touch each corner. Remember, you're trying to tell the TouchWindow where a specific point (the corner of the screen) is. Turning off the TouchWindow once it has been started up may interfere with keyboard commands. Keyboard commands will be properly recognized once you leave HyperStudio, or re-activate the TouchWindow.

Volume Control: This slider lets you control the overall volume level of the stack in memory.

If you get a stack that plays sounds using the built-in speaker, for example, the sounds will be too loud if you are using an external speaker. Likewise, if you have a stack that was set up using an external speaker, it may be too quiet using the built-in speaker on the GS.

The volume in HyperStudio is controlled by a combination of factors. The Control Panel volume is factored into the overall sound volume in all HyperStudio stacks - this is the *system* volume. If you want to change the overall playback volume in a stack, use the slide control in the Preferences section - this is the *stack* volume. If you want the new volume to be permanent, remember to save the stack back to disk. The volume of a particular sound is selected in the tape deck screen when a sound is first added.

More About Data Access Methods

Local Data: There is also a third access method that is a variation of the extended data type. However, this method is dependent on how you store your files on disk, rather than a specific choice in HyperStudio.

When HyperStudio tries to locate the file for disk-based data, it first looks in the same directory as the stack, regardless of what the absolute location of the data was when it was linked to the stack. Data located in the same folder as a stack is called *local data*.

The main advantage to putting all the disk-based data in the same folder as your stack is transportability. Suppose you had created stacks on your own hard disk that referenced text, graphic and sound files in various locations on your hard disk. If you then wanted to move the stack onto a 3.5" disk, the only way to run the stack would be to have the hard disk attached to the same computer that the stack was running on.

With a standard extended data item, the entire data remains in a disk location which must be available when the stack is used. When it comes time to move the stack from one disk to another, it is unlikely that you will be able to easily move all of the data files referenced by a given stack, especially if the data is located on many different disks.

By keeping all the data files referenced by a given stack in the same folder, moving the stack is as simple as moving the entire folder from one disk to another using any file copying utility such as the Finder, DeskTop, Copy II+, ProSel's Cat Doctor, etc.

In general, when designing a stack, you can use the following guidelines:

- When the entire stack *can* fit in memory all at once, use the imbedded data type. Stacks done in this manner are also much easier to distribute to others.
- If the stack will be running in a *stable* environment, where the referenced data does not

change in its location, and you want to have common files that are accessed by a variety of different stacks, then the extended data type is recommended.

- If you are using disk-based data because of memory considerations, and you anticipate moving your stack to another disk, then move the referenced files to the same folder as the stack.

File Location Dialog Boxes

When HyperStudio cannot locate the volume that a data file is located on, it will first display a dialog box asking you to insert the needed disk. If you cancel this dialog box, then you'll get a dialog box asking you to manually locate the file on any disk or folder. If you cancel this dialog box, then HyperStudio will skip that data item in building the card, or executing a button action, and will continue as well as possible.

Last-used directories

When adding clip-art, sound files, loading stacks, etc., HyperStudio remembers the last-used directory for various kinds of data. This makes it easy to go back to the last directory you loaded something from. However, you should also remember that if you put artwork, sounds, etc. in other directories, the first time you go to add clip-art, you will have to use the Standard File interface to open the necessary folder. If you have a large number of HyperStudio-related files, you may find that organizing subdirectories is both useful and necessary.

Alternate Home Cards

The Home.Stack on the HyperStudio disk has been set up with the beginning user in mind. The Home Card in this stack shows the stacks available on the different disks in the HyperStudio package, and also invites you to a special screen (the Just Starting... icon) if you are new to HyperStudio. From this second screen, you can see what different areas of interest have been addressed by various stacks.

However, once you've used HyperStudio for a while, you may wish a more direct Home Card, without the Just Starting... icon. On the HS.Demo disk, you'll find an alternate Home Stack that may be more efficient for daily use of HyperStudio. Also, remember that the Home Card is just a graphic image with invisible buttons. You can use the paint tools to create your own unique Home Card, such as a picture of a desk with items on it, the bridge of a starship, or any other interface that makes it easier for you or the person using HyperStudio.

The Sound Shop™

The Sound Shop utility is designed to let you digitize, edit, and save sound files for use with the HyperStudio system. Although HyperStudio lets you record a sound while you are creating a stack, the Sound Shop is provided to give you more control over all the aspects of the recorded sound. It can also be used for converting sound files from other sources, such as public domain sound sample disks, and sounds recorded with the MDIdeas, FutureSound, or Applied Engineering products.

To run the Sound Shop, click on the Sound Shop icon in the HyperStudio Home Card. Sound Shop can also be launched, like any GSOS system file, from the Finder, Program Launcher, or other program selector.

Using Sound Shop is very easy, and the best place to start is with recording a sound using the microphone, and then seeing what you can do with it!

The first thing to notice on the Sound Shop is the overall screen layout. The blank window in the top half of the screen is where the sound wave for whatever sound you record or load from disk will be displayed. The window is blank now because there is not a sound in memory yet.

Below the wave display window are three boxes that show important number values about how much memory you have available for recorded sounds, how much time that represents at the current record and playback rates, and other useful values.

The scroll-bar controls at the bottom of the screen are used to control the recording and playback of sounds in terms of volume, record/playback rates, an "echo" special effect, a repeat count, and the start-recording threshold value.

To the right of the status boxes are three yellow buttons. "Record" starts the recording process. "Play" starts the playback, and "Stop" is used to stop the playback. Above these buttons is an "input level" indicator, and is used to check the current "level" of the sound input device, such as the microphone, tape input, etc. The Play and Stop buttons are disabled because there is no sound to be played yet.

A Brief Test of the System

Before starting, you should have already installed the HyperStudio sound recording card (digitizer) and microphone according to the installation instructions at the beginning of this manual. If you have not already done so, go back and install these devices now.

Your microphone should be plugged into the back of the computer. If the microphone is functioning properly, you'll see a green vertical bar just above the Record button. This is the

level indicator, and is used to make sure that a sound input device is both connected, and, if necessary, set to a sufficient volume for a good recording. The green bar should move up and down as you speak into the microphone. If the microphone is not attached, the bar will be red. The bar also turns red whenever the input signal is too strong for a good recording, such as when you shout into the microphone, or if the volume were turned up too high on a tape player attached to the digitizer card. The bar should not be red under normal conditions if the microphone is attached, and there is no excessive sound input.

You are now ready to record something. Before you record, check the Record Rate and Playback Rate controls at the bottom of the screen. For now, both these values should be 10435. The rate value tells you how much memory is required for each second of sound recorded. In this case, you will use 10.4K of RAM memory per second. This is a good rate for recording a voice. We'll look at this in more detail later, but for now, the important thing to do is to make sure the values are the same for both record and playback.

The other settings should be at their default values:

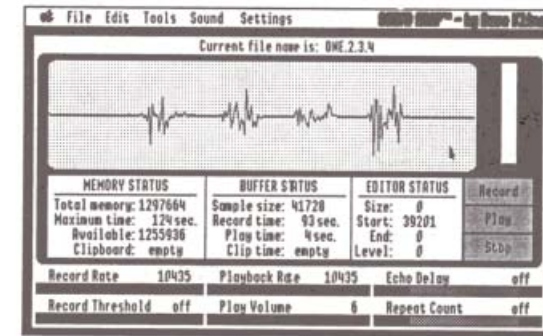
Echo Delay:	off
Record Threshold	off
Play Volume	6
Repeat Count	off

To record your voice, click on the Record button with the mouse. When you see the screen border turn red, count into the microphone: "One, two, three, four" (and pause just a little between each number!). The level indicator will not be active during a recording. It is only used to check the level prior to recording. Press the Return (or any other) key to stop the recording. (Stop is only used for stopping the Playback function).

Note: When recording your voice using the microphone, you will have to speak "firmly" for a good recording, but an overly loud, or shouting voice is not required. Holding the microphone close to your mouth will help. The right level is sometimes called a "radio voice", that is, the way a radio announcer would speak into his microphone for best clarity and volume. This works for them, and it will work for you!

The default value of 6 for the playback volume has been set up for best results when using an amplified speaker like the optional HyperStudio powered speaker. If you are using the internal speaker, adjust the volume control to a value of 10.

After a brief pause, the wave display window will be redrawn to look something like this:

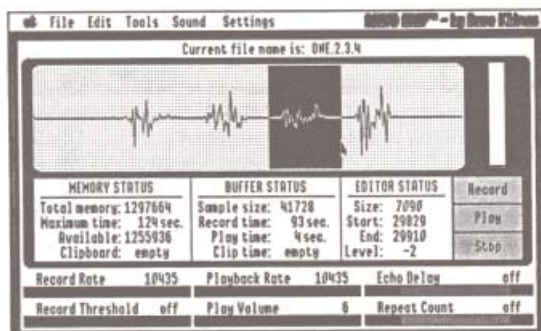


The data you have just collected is sometimes called a *sound sample*, and is a digital recording of your voice. At the current rate setting (10435), the computer is checking the microphone input about 10,000 times each second, and recording a number value for each moment. When the recording is completed, the data will be graphed on the screen. The resulting graph represents the sound sample. Each grouping in the sound wave is one of the words you spoke. The computer plays back your sound sample by re-scanning the data, and sending the recorded signal back out to the speaker.

To hear your recording, click on the Play button, and listen to the sample. Play it several times. Try pressing the Stop button in the middle of the playback. Now let's explore each of the other functions in the Sound Shop, and see what kinds of things Sound Shop will let you do with your recording.

Playback Rate: Use the mouse to change the Playback Rate (the slider control near the bottom of the screen). Try values of about 20,000 and 5,000. If the Playback Rate is faster (a value larger) than the Record Rate, the pitch will be higher, and the sound sped up; if the Playback Rate is slower, the pitch will be lower, and the sound slowed down. When you save the sound sample to disk, the playback rate setting will be saved with the file.

Playing Part of a Sample: Set the Playback Rate back to 10435. Now move the mouse pointer until it is in the sound wave window, and positioned at the beginning of the third sound wave group. Press the mouse button and hold it down, and drag the mouse until the entire wave group is highlighted. Then release the mouse button.



This is how you *select* part of the waveform in Sound Shop. Now press the Play button. Notice that only the word "three" is played. Whenever you select a portion of a sound, Sound Shop plays only the part selected.

Volume: This controls the *playback* volume of your sound sample. It does not affect the recording volume. Like the Playback Rate, the Volume setting will be saved when your sample is saved to the disk. This is so that you don't have to adjust this control within a StudioWare application if you don't want to. Try changing the volume now to see how it affects the sound. Because of the way in which sound is done on your computer, very high or low volume settings will not sound as good as the moderate settings.

Repeat Count: This controls how many times the sound will be repeated when it plays. This might be used, for example, with sound effects like a gunshot or footstep. When the sound is repeated a few times, you can get interesting effects without taking up the large amount of memory that a larger sample would require. Try changing the Repeat Count to 3, and press Play. You should hear the word "three" said three times.

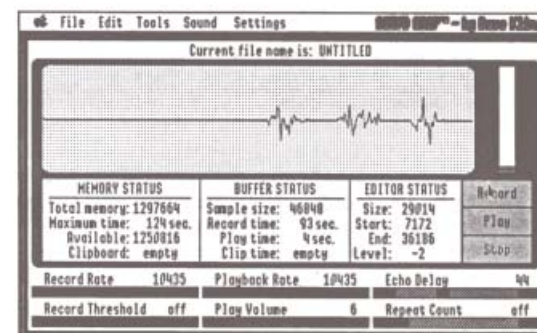
Echo Delay: This controls a delay within the computer between the repeated playing of the sample. Each repeated action, however, is started while the previous playback is still playing. The result of any given value depends on a combination of the sample length, the Playback rate, and the Echo Delay value. Even slight variations in the Echo Delay value can produce different effects. In general, the echo effect will vary between a "close" echo, reminiscent of singing in the shower, and a "larger" echo, like that of a stadium.

The best approach is to start with an Echo Delay value of, for example, "40", and then play the sound sample. Then adjust the Echo Delay to 39 or 41, and try again. Experiment until you get just the effect you want.

Remember to set the Echo Delay back to "off" before trying the functions described next. It doesn't hurt anything to combine it with other functions, but there will be less confusion if you leave it "off" for now.

Record Threshold: Ordinarily, recording starts soon after you press the Record button. However, suppose you want to start the recording process only when the sound actually starts. The Record Threshold lets you specify a number value that represents how loud the sound should be to trigger the start of the recording process.

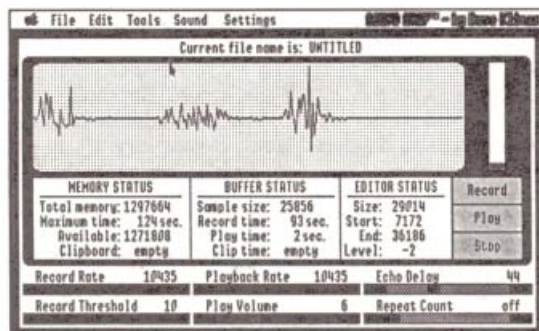
To see how it works, first do a recording with the Record Threshold set to "off". This means recording starts as soon as you press the Record button. Before recording, click the mouse in the wave display window once to deselect "three", if necessary. Then, press the Record button, wait for a few seconds, and then say "one, two, three". Then press the Return key to stop the recording. Your recording should look something like this:



The relatively flat area at the beginning of the waveform is the time you were pausing before starting to count. This wait wastes memory. If the sound you want to record is not predictable, you could use up all the available memory just recording the waiting period.

Now set the Record Threshold to 10, and press Record again. This time the screen border will turn to green. Wait a few seconds once more, and then count "one, two, three" and press Return to stop the recording. As soon as you started speaking, the screen border should have changed to red, indicating that the recording process had begun.

This time the recording will look like this:



This time there is no wasted space at the beginning of the recording. The number value you choose depends on the sound you are recording. The center line of the waveform window has a value of zero. The very top and bottom of the window represent values of +127 and -127, respectively. If the sound you are recording has large peaks (i.e., is relatively loud), you can use a high threshold value, for example 50-100. On the other hand, if you're trying to capture a quieter sound, a smaller value like 5-10 would be better.

Now let's look at some of the menu functions in Sound Shop.

File Menu

This menu is used to save sounds you've recorded with Sound Shop onto a diskette, and to load the sounds back into the Sound Shop or HyperStudio. Use the mouse to pull down the File menu and examine the entries. For many of the menu commands, there is a keyboard equivalent. That is, you can press a key instead of using the mouse and menu. For example, pressing **CN** gives the same result as choosing New from the File menu.

New: [**CN**] This erases whatever sound is currently in memory.

Open: [**CO**] This loads a sound file from disk. When first chosen, Sound Shop shows the files in the same directory as where the Sound Shop software was located when it was run. On the HyperStudio disk, this will be the pathname /Hyperstudio. There is another disk in the HyperStudio package, called HS.Sounds, that has a sampling of digitized sounds. Try loading a sound file from this disk.

To load a sound file, select the file you wish to load, or Cancel to go back to the main screen. Clicking on Disk changes the disk being examined. Clicking on Close closes the folder (if any) that you are currently in, and returns you to a previous "level" in the disk directory.

Note: If you have recorded a sound, or loaded a sound file and then made a change to it, using the Open function will first bring up a dialog box that reminds you the current file has not been saved. If you click on "Yes" (to save the file), you'll be shown the current disk directory, where you can enter the name to save the file under. After saving the file, you'll be immediately presented with the disk directory again so you can open the file you want. If you choose "No" (not to save the file), then the sound file you load will completely replace whatever sound file is currently on the screen.

Save: [**CS**] This function is used to quickly save a file under the name that it currently has. You cannot use this function until you have done a Save As (thus giving a new recording a name), or unless you have loaded an existing sound file from disk (in which case it already has a name). Once the filename is known, this menu item will read something like "Save Filename".

Save As: This is used to save a file under a new name, and is required to save a new recording where a new name is required. As with the Open command, you'll be shown the current disk directory, and asked for the name that will be used when saving the file.

Revert: This is used to re-load a sound file on the disk, without having to go through the more lengthy Open sequence. For example, if you have loaded a sound file from disk, made some changes, and then decide to start again with the original file, just choose Revert (which will actually read something like Revert to "Filename"). This loads the original file, completely replacing whatever sound file is currently on the screen.

Quit: [**CQ**] Choose this when you want to quit Sound Shop, and return to your program selector. If you have not saved the sound sample currently on the screen (or made changes since the last change), you'll be given an opportunity to save the file before you quit.

Edit Menu

This menu contains the cut, copy and paste functions, and other useful commands related to editing your sound sample.

Undo: [**CZ**] This is used when you want to change your mind about some editing action you have taken. Not all actions can be undone, but many can. If you cut a portion out of a sample, choosing Undo puts it back. If you paste some data into your sound sample, and change your mind, Undo removes what was just pasted, and leaves the clipboard with the data still on it. If you are new to the idea of the clipboard, and copying and pasting data, the next sections will explain this in greater detail.

Cut, Copy and Paste: [⌘X, ⌘C, & ⌘V] These three functions are used together to either remove part of a sample and move it to a new position in a sample, or to copy a portion of the sound from one position in the sample to another. There are also special effects that can be done by combining these editing functions with some of the Tools functions described a little later.

Selecting **Cut** from the Edit menu removes part of your sound sample, and puts it on the computer's *clipboard*. The term "clipboard" is used to suggest how the editing process works. Using the mouse, you first select a part of the sample on the screen. For example, record the words "one, two, three, four" as you did earlier. Now use the mouse to highlight the third wave group on the screen, which corresponds to the word "three". You can check this by pressing on the Play button after selecting the desired part of the waveform. You should hear just the word "three".

Now use the mouse to pull down the Edit menu, and choose Cut. After a brief pause, the screen will be redrawn, now with just three wave groups. Click on the Play button. You should hear your words "one, two, four". "Three" has been cut from the sample. To hear what is on the clipboard, choose **Play Clipboard**, which is near the bottom of the Edit menu. You should hear just the word "three".

Now, for fun, position the mouse between the first and second wave groups, and click once. A marker bar should appear. This is used to indicate where you want data from the clipboard to be placed. We can now insert the word "three" in the sample by using the Paste function.

Choose **Paste** now from the Edit menu. Again, there will be a brief pause while the sound on the clipboard is pasted into the sound sample at the marker bar. When the waveform is redrawn, you'll again see four sound groups. Press the Play button to hear the edited sample. Now it should count "one, three, two, four".

The **Copy** function puts a copy of the selected sound portion on the clipboard, but does not remove it from the original sample. This is most useful when you want to use the **Layer** function in Tools menu. See the Layer command for a description of its use. You can also use the Copy command to get part of the sound from one file, then load a second file, and paste the sound portion into the second file.

Important!! If you are copying and pasting between two separate files, and the playback rates in each file are different, you will get accordingly strange results.

There is really no way to get around this problem, other than adopting the habit of trying to minimize the number of different recording rates you use when you create your sound samples. Although the Sound Shop provides a very wide variety of record and playback rates, this is mostly in the interest of compatibility with sound files created with other hardware products. From a practical standpoint, the 10435 recording rate will perform just fine for most voice recordings, and for music, or sounds with a lot of high frequencies, a rate of 16398, or

perhaps 22824, will work well. If you limit yourself to using just these rates, you'll have much more flexibility in combining parts of one sample with another.

Clear: The Clear function is a lot like a Cut, except that the clipboard memory is not used. For example, suppose you had the word "three" on the clipboard, but wanted to completely delete the word "two" from the middle of the sample without losing the word "three". By selecting the sound for "two" and choosing Clear, the selected portion would be removed from the waveform, and the sound "three" would still be on the clipboard. Try it now to see how Clear works. Clear the word "two" from your sample, and then choose Play Clipboard to verify that the word "three" is still there.

Play Clipboard: This plays whatever is on the clipboard from the last Cut or Copy operation. This is useful to hear exactly what you have captured on the clipboard before pasting it somewhere else in the current sample, or even another sound file.

Clear Clipboard: This erases whatever is currently on the clipboard. The main use for this would be in those cases where you wanted to absolutely maximize the amount of memory available for a subsequent operation, such as a long recording. This is most likely to only be of use when the *Maximum Memory* option is in effect (see the Settings menu description later).

Tools

The Tools menu provides a number of additional editing functions that can produce interesting effects, and help you create the best sample possible. In general, if no specific part of the waveform is selected, then the action will be performed on the entire sample. On the other hand, if you select just part of your sound sample, then only the selected part will be affected. Let's see what each of these functions is used for.

Erase: [⌘E] This clears the selected part of the waveform back to zero (the center line). This is used most often to erase just part of a sample. To see how this works, we'll record something with a deliberate flaw, and then use the Erase command to remove it. First record the words "one, two, three, four" again. However, this time, between the words "two" and "three", tap the microphone once with your fingertips.

When you play the recorded sound, you should hear our rather contrived "pop" between the words "two" and "three". You can see this in the waveform as a sharp spike in the middle of the recording. Use the mouse to select just the spike. Verify you have our deliberate error in the recording by using the Play button. Now choose the Erase function from the menu. The selected part of the waveform will be erased back to the centerline, with the result that the "pop" has been removed. This can be used when recording sounds from noisy sources, or in those cases where you want to remove just a portion of a series of sounds, but don't want to change the length of the sample by using the Cut or Clear functions.

Fade Up & Down: [⇧U & ⇧D] Use this to taper the volume of a sound sample at the beginning and end. Fade up starts the volume at zero, and ramps up to full volume over the range you have selected. This would be used to edit a sample that had been "sliced", for example, from the middle of a longer sound. By doing a Fade Up at the beginning, your sample will sound more natural. Fade Down is just the opposite, and is used at the end of a sample to fade out the sound. These effects can be used anywhere in a sample, not just at the beginning and end.

Filter: [⇧F] This is a subtle "smoothing" function that can take some of the background "hiss" out of a noisy sample. To use it, you select the portion of the sound sample you want to clean up, and then choose Filter. If nothing is selected, then the entire sample is filtered. You may have to use the function several times to produce a very noticeable effect. On the other hand, repeating the operation very many times will start to make the part of the sound you're interested in sound "dull" or muffled. This function is unlikely to be needed on any recording you do with the HyperStudio hardware, but is provided to help you with sound files you get from other sources.

Layer: [⇧L] This is a very useful editing tool. It takes whatever is on the clipboard, and adds it to the existing sound at the selected point. With it, you can produce your own "echo" effect, and also mix different sounds. With the Layer tool, you can take what is on the clipboard, and mix it with the sound currently on the screen, starting at the current edit marker.

For example, you might have one recorded sound of falling rain, and another of thunder, and want to combine them into one sound sample. You would first load your file of thunder, and copy a section you like using the Copy function. Remember, you can use the mouse to select a range, and then use Play to make sure it's what you want.

Once the thunder sound was on the clipboard, you would open your Rain sample file. What you want to do is to add the thunder "in the background", so to speak. Put a marker bar about halfway in the Rain sample (by positioning, then clicking the mouse), and then choose Layer from the Tools menu. The sound on the clipboard will then be combined with the rain sample, starting at your marker point. Layer literally adds the two waveforms together, producing the mixed sound that you want.

You can also use Layer to manually produce an echo effect. First, make a fresh recording now of the familiar "one, two, three, four" test pattern. You can record it right over whatever might already be in memory (if anything). Recording always completely erases whatever was in memory.

Now, select the word "three" from the waveform, and also, look at the Editor Status box just to the left of the Record button, and note where your selection starts. Choose Copy to copy the word "three" to the clipboard. Now click once with the mouse slightly to the right of the beginning of where you selected the word "three" a moment ago. For example, if your selection started at 21000, try putting the marker bar at 22000 before you choose Layer. The resulting effect should be a kind of "hollow" sounding echo. Now put the marker bar halfway

through the word "three", and choose Layer again. This time the resulting sound should be a more "classic" echo.

Layering will also work better with higher record/playback rates. At lower rates, you may have problems with the combined sound actually being quieter than the original files. Higher sample rates avoid this problem, though obviously at the cost of a greater use of memory. Our advice is to try to get the effect you want at a lower rate first, and then increase the rate only if necessary.

Important!! If you are layering a sound that was copied from a different file, you will get strange results if the playback rates in each file are different. See the discussion in Copy & Paste for more information on this.

Redraw: [⇧W - "Waveform"] This is used to redraw either a selected portion of the waveform, or to restore the original view after viewing just a portion. To see how this works, select just the word "one" on the screen, and then select Redraw.

Now press the Play button. Notice that just the word "one" plays, and that the screen is now blue. With the Redraw command, you have "zoomed in" on just the part of the waveform that plays the word "one". Now select just the first half of the waveform for one. (Highlighting will now be a light-colored region). Choose Redraw again, and then Play.

You should now have just the "wa" sound in "one". With Redraw, you can select, and reselect smaller portions of the waveform as many times as you wish until the window shows each individual "bump" in the wave that creates your sound. Of course, very small samples will reach the point where an audible sound may not even be heard, since you are dealing with a sample that may be as small as a few hundredths of a second. The smallest sample that Redraw will show is 256 data points from one side of the waveform window to the other.

To restore the original waveform display, just choose Redraw without selecting a region. Choose Redraw now to restore the display.

Reverse: [⇧B - "Backwards"] This function reverses the selected portion of the waveform, or the entire sample if nothing is selected. It is mostly of novelty value, although if your favorite local radio station is having a contest to recognize popular songs played backwards, it may represent some real income potential to you!

Stutter: [⇧T - "Tripping off the tongue" Oh, all right, then you think of a better way to remember it!] This is commonly called the "Max Headroom Effect", since becoming popularized by that once-famous television personality (yes, fame is fleeting!). It has the effect of doing copy and then multiple paste of the selected sample. Try it on the beginning the word "two". You want to select just the "t" sound of the word "two". Remember, you can choose Play while a portion is selected to see if you have just the part you want.

Once you've selected the part you want, choose Stutter from the Tools menu. Now click on the Play button to hear the effect.

Sound Menu

This menu gives you the equivalent of the Play and Record buttons, and also offers an alternative Record mode which can be useful in some situations.

Stop and Play: [⌘H - "Halt" & ⌘P] These are equivalent to the screen buttons. The important thing to notice here is that there are keyboard equivalents of the Play and Stop buttons, namely Apple-P and Apple-H. If you're doing a lot of repeated operations, it can be more convenient to use the keyboard, rather than the mouse, to operate the record and playback functions.

It is also important to notice, although it has been mentioned earlier, that the Play button *only plays the selected part* of the waveform. This is very useful when you are about to do a copy or a paste, because you can make sure you have selected just the portion you want. In addition, there will be times when you want to concentrate on just a portion of a recording, and this makes it possible, without having to listen to the whole thing each time.

Record Modes: [⌘R & ⌘M - "Mode"] Like Play, Stop, and other Sound Shop commands, the Record function also has a keyboard equivalent, Apple-R. However, the actual way in which the recording is done can be one of two different methods. In the usual, or *default* mode (Record Mode 1), the recording starts as soon as you press the Record button. The recording stops when you either a) press the Return (or any other) key, or b) when the recording has used up all available memory.

For short sounds, this works pretty well. If you are recording a sound off a sound effects tape, for example, there is most likely going to be a space at the beginning where you start the player going, and probably a bit of a space at the end where you let the tape play for a while before pressing the Stop button in Sound Shop. However, both "dead areas" in your recording are easily edited out by using the Cut or Clear editing functions.

But what about those cases where there are a lot of continuous sounds, (perhaps part of a cat fight outside your window) and you want to get just the right part of the sample. When you start the record process, it will stop on its own in a relatively short time, and you could miss your perfect yowl just as you were restarting the recording for the fourth time.

Record Mode 2 is the solution to just this problem. Record Mode 2 is a *continuous* recording operation that never stops until you press the Return (or any other) key. When you do stop the recording, the *last* sounds you heard will be at the end of your sample, and you'll have however many seconds before that as are indicated in the Buffer Status window. At that point, you will probably want to Cut or Clear most of the sound at the beginning of the sample to get just the part you want as the file to save.

To tell Sound Shop you want to use Record Mode 2, just select Record Mode in the Sound Menu. You'll be presented with a dialog box that lets you choose between the two recording

modes. The current recording mode is indicated by which Record Mode is highlighted in the Sound Menu, and will remain in effect until you either change the mode, or you quit the Sound Shop.

Selected Record: Although not a specific menu item, this function can come in very handy. If you select just a portion of your sample, and then choose Record, Sound Shop will replace *just the selected part* with the new recorded sample. You can use this to "patch" a sound sample if you wish. Note that this simply replaces the selected portion, and does not lengthen or shorten the selected area. This means that if you patch-record a shorter sample than the selected area, any area not recorded over will retain whatever sound was there. On the other hand, if you leave the record mode on for a period longer than the selected area, the record mode will automatically stop and you will not record anything after that point.

Although the selected record function can be handy in some situations, the alternative method is to use the copy and paste editing functions with sounds recorded in their own files, and to merge the sounds at your leisure.

Important: Note that Recording a new sound will always clear the clipboard.

Settings Menu

This menu allows you to set and reset various Sound Shop parameters. The options are as follows:

Current File: Use this to restore the sample size and Playback Rates to their original values.

Startup Defaults: Choosing this sets the sample length to approximately 2/3 of the total free memory in the system, and restores the Record & Playback Rates to the startup values.

Maximum Memory: To allow working room for the Clipboard, the Sound Shop normally only allows you to use about 2/3 of the available memory to record a sound. If, for some reason, you require the maximum amount of memory to record a sound, or edit a large file, choosing this function will set the available memory to the maximum size.

Disable/Enable Cautions: Usually the Sound Shop tries to remind you about the consequences of such actions as a layer or clear operation where the action cannot be undone. However, if you would rather take things in your own hands, and not have to bother with the occasional reminder messages, choosing Disable Cautions will temporarily disable this function. You *will* still be prompted when loading a new file, with a reminder if you have not saved an altered file, or you've made a new recording.

Choosing Enable Cautions (alternate menu item in this position) will restore the normal operation of the reminder messages.