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About the author

NoteWriter was conceived, designed and written by Dr. Keith Hamel at the University of British Columbia. Dr. Hamel is an Professor of Composition at the UBC School of Music and is Director of the UBC Computer Music Studio. He holds a Ph.D. in Music from Harvard University and has written extensively for both acoustic and electroacoustic media. His works have been performed by many of the finest soloists and ensembles both in Canada and abroad. In recent years, he has received commissions from IRCAM in Paris, Ensemble InterContemporain, Vancouver New Music, the Elektra Women's Choir, clarinetist Jean-Guy Boisvert, bassoonist Jesse Read, saxophonist Julia Nolan and pianist Douglas Finch.

As a software developer, Dr. Hamel is also the author of NoteAbility™, a comprehensive music notation program for NextStep / OpenStep computers.


Chapter 1 - Introduction

Overview

NoteWriter is a music notation system which allows you to create professional-quality printed scores. The program was designed to be as flexible as possible, in order to accommodate a wide range of compositional styles, musical complexities and page formats. Unlike other notation systems, NoteWriter places you in complete control of the final appearance of your score. You may position any of the available images anywhere on the page (regardless of notational legitimacy) and freely modify the score with the interactive editing routines and imported graphics. The program is compatible with all PostScript® printing devices, enabling a variety of printing qualities to be generated from the same file. In addition, documents or fragments of documents can be saved in Encapsulated PostScript format (EPS) and inserted into most word processors and page layout programs.

Hardware Requirements

NoteWriter runs on all Apple® Macintosh™ computers (from the Macintosh Plus to the most recent Power Macintosh) with a minimum of 1 Megabyte of RAM above that required by the Macintosh System Software.

 **NoteWriter versions 2.78 and higher are compatible with System 7.0 and versions 2.85 and higher are compatible with Macintosh System 7.5.**

The program supports two printing methods: **Draft-quality printing** (dot matrix) on the Apple ImageWriter®, LQ™, StyleWriter™ and Personal LaserWriter™, and **Laser printing** on any PostScript® printing device such as the Apple LaserWriter™ or Linotronic® L300 phototypesetter.

Software Requirements

In addition to the NoteWriter software included with this manual, the Sonata™ music font from Adobe Systems, Inc. is required for PostScript printing (i.e. high-quality printing). If you desire high-quality printed output, this font should be purchased and placed in your System Folder for automatic downloading during PostScript printing. Draft-quality printing can be done without the Sonata font on dot matrix or laser printers. Figures 1.1 - 1.3 show the difference in quality between the screen display, draft printing and PostScript printing

(using the Sonata font.)

NoteWriter is compatible with MultiFinder™, System 7.0, System 7.5 and most RAM programs. If you are using a RAM programs, you should allocate approximately 1Mbyte of RAM to ensure sufficient working space for NoteWriter. The program can also be used with external large screens displays - the maximum document window size is 60" X 60".

System Design

The basic philosophy which underlies the design of NoteWriter is that all aspects of all images in a music score must ultimately be controllable by the editor. Normally, NoteWriter will assist in the correct placement and alignment of music images, but will not restrict the user from constructing the score exactly the the way she or he wants. There are virtually no limits to the complexity or variety of music scores which can be represented with NoteWriter.

NoteWriter is oriented towards producing a complete, unrestricted score. Each page of your score can be a different size and have a different staff format if desired. Although the normal working surface of a page is up to 48" X 48", the page origin may be shifted, allowing a maximum size of 96" X 96". Up to 40 staves of any length may be placed anywhere on the working surface. Staves may be grouped and braced in any combination.

NoteWriter is a graphics-oriented program music is represented as a complex collection of images (music and other) which are positioned on the screen with the mouse, and associated with coordinates (or Control Points) on the screen. Selecting and moving the Control Points causes the associated images to be adjusted. Since the system understands relatively little about the syntax of music, any image (or group of images) may be moved or adjusted regardless of the notational legitimacy of the result. It is this feature which gives NoteWriter its flexibility. In order to aid in the accuracy with which the score can be manipulated, NoteWriter images appear slightly enlarged on the screen. When printed in High-quality, the images are automatically scaled to normal size.

Back-ups and Upgrades

Please note that only registered owners will be eligible for backups

and upgrades. A list of registered owners is kept by the distributor of NoteWriter, and notices concerning upgrades will be sent when upgrades are ready for distribution.

Printing From NoteWriter

NoteWriter supports a wide variety of printers, but is primarily designed to operate with PostScript printers. During High-quality printing, all images are converted into PostScript code and sent to the printer. This permits greater precision in the placement of images and better appearance of graphics such as slurs and ties. For best results, you should use a PostScript printer in conjunction with the Sonata font. When using an ImageWriter, StyleWriter or non-PostScript laser printer the score will be sent to the printer as it appears on the screen, and the print-out will be less elegant than on a PostScript printer. If you are using a non-Apple PostScript printer make sure you have placed the proper printer driver in your System Folder and that the printer has been properly setup in the Chooser™. In some rare cases, it may be necessary to save your NoteWriter documents as PostScript files and download them directly to your PostScript printer.

Printer Examples



Fig. 1.1: Screen Display



Fig. 1.2: Dot Matrix Output

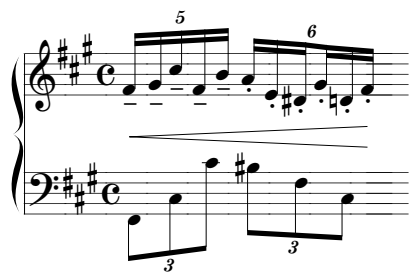


Fig. 1.3: Laser Printer Output

Chapter 2 - Operating The Program

This manual assumes that the user is familiar with the Macintosh and with standard editing procedures (e.g. pointing, clicking, and dragging.) For details concerning computer operation refer to your Macintosh Owner's Guide.

Getting Started

The disk included with this manual contains all the files necessary to operate NoteWriter except for the Sonata music font which is required for high-quality printing on PostScript printers. This font must be purchased separately and placed in your System Folder so that it can be automatically downloaded to the laser printer or phototypesetter. Sonata may be purchased from:

Adobe Systems Incorporated
1585 Charleston Road P.O. Box 7900
Mountain View, CA 94039-7900
<http://www.adobe.com>

Hard Drive Installation


The NoteWriter disk you received is a Key Disk and is copy protected. The Key Disk can always be used to launch the copy of NoteWriter on the original disk or to allow copies of NoteWriter installed on hard drives to be launched. In addition, a program called NWAutorizer is included on the Key Disk. This application allows a copy of NoteWriter to be authorized on a hard drive so that you can run the program without the Key Disk. NWAutorizer allows 1 copy of NoteWriter to be authorized on your hard drive, and allows 2 additional authorizations in case your installed copy of NoteWriter is accidentally erased. NWAutorizer may also be used to de-authorize copies of NoteWriter that are no longer being used. (Remember to de-authorize your installed copy of NoteWriter before re-initializing or replacing your hard drive.)

 **NWAutorizer can only be run from the original Key Disk.**

To install NoteWriter on your hard drive:

- 1) Insert your Key Disk in your main floppy drive.

- 2) Drag a copy of NoteWriter 2.87 from the Key Disk onto your hard drive.
- 3) Launch the NWAutorizer program (on your Key Disk)
- 4) Read the instructions and click the Continue button.
- 5) The total number of authorizations will be displayed. Click the Authorize button and locate the copy of NoteWriter that you want authorized (i.e. the one you just placed on your hard drive.)


 **A common error made by users is to authorize the copy of NoteWriter that is on the floppy disk rather than the copy of NoteWriter that you have placed on the hard drive. Make sure you have located the correct copy of NoteWriter!**

- 6) The program will inform you whether or not the authorization was successful.
- 7) Put your Key Disk away in a safe place.

If you have purchased the Sonata font, drag the Sonata screen fonts and the Sonata laser font (called Sonat) into your System Folder.

Font Requirements

If you plan to print documents from NoteWriter, you should ensure that the Sonata font has been placed in the System Folder before launching NoteWriter. During printing, NoteWriter will automatically download the Sonata font if it is correctly installed in the System folder. Optionally, you can download the font manually with the LaserWriter Utility program.

 **If you get regular characters instead of music symbols when you print your score, then the Sonata font was not downloaded to the printer during printing and you may have to use a utility (i.e. LaserWriter Utility) to manually download the Sonata font to the printer. After manual downloading, the font will reside in the printer until it is turned off.**

NoteWriter Icons

There are six desk top icons associated with NoteWriter: one application icon, one document icon, one preferences icon, one library icon and one icon for each of the additional file formats supported by NoteWriter.



Fig. 2.1: NoteWriter Icons

The PostScript and Paint icons are used for exporting musical excerpts to other applications. These files are created by NoteWriter, but the data they contain cannot be read back into the program. Normally, scores are saved as NoteWriter documents. If you wish to save files in PostScript or Paint format, you should also save the file as a NoteWriter document (i.e. NoteWriter format) so that you are able to re-edit the file. The Paint format is included for historical purposes - a picture can also be performed by taking a screen-snap of the computer from the Finder (Command-Shift-3).

Preferences

The Save Preferences menu item saves the current positions of all windows (including the Keyboard and Show Score windows) and the current PostScript settings in a preference file (called nw-pref). When NoteWriter is launched, these settings are loaded from this file. This feature allows the user to re-define the position of the windows for use on large displays and to set their PostScript printing preferences.

Libraries

Libraries contain collections of customized images or groups of images that have been saved for later use. Essentially, they function much like the Macintosh Scrapbook, but they can be freely created, loaded and saved to disk. They are discussed in detail in Chapter 3.

Basic Operations

The following steps outline the procedure for producing your first music score with NoteWriter:

- Open the program and select New from the File Menu.
- Specify a page format for your document.
- Draw the desired music images using keyboard commands to load the images and the mouse and/or keypad to place them on the page. You may draw material anywhere on the document in any order.
- Edit the document by moving, adjusting, copying and pasting images as necessary.
- Print the finished document in either Draft-quality mode or High-quality mode at a specified reduction or enlargement. Large format documents may be printed in pieces (tiles) and taped together to create large pages.
- Save the document in NoteWriter II format for further editing. In addition, the document (or fragments of the document) may be saved in PostScript format or Paint format for insertion into word processor, graphics or page layout programs.
- Quit the program

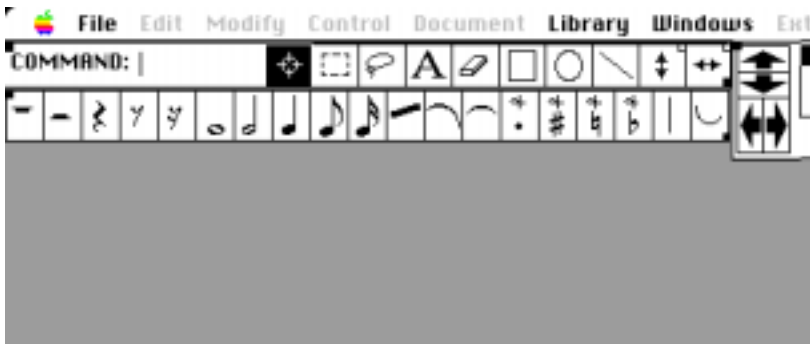
Step 1: Open the Program

Turn on the computer and locate the NoteWriter application (which should be installed on your hard drive.) If you have not yet installed a copy of NoteWriter on your hard drive, you can use the copy of NoteWriter on the Key Disk.

To start a new file open the NoteWriter application by double-clicking the NoteWriter application icon or by selecting the NoteWriter icon and choosing *Open* from the Desktop™ *File* menu. To open an existing file, you may perform either of the above operations on a NoteWriter document icon.

! Documents or fragments of documents which have been saved as PostScript files or Paint files should not be used to launch NoteWriter. These files are stored in TEXT (text) and PNTG (paint) format and cannot be loaded into NoteWriter.

When NoteWriter is loaded, several small windows appear at the top of the screen.



2.2: Initial NoteWriter screen.

The top window (Command Window) contains the command line and function tools. Below is the Image Palette and to the right is the Scroll Window.

All three windows may be moved by dragging the handle in the top-left or lower-right corner. The windows can be positioned anywhere on the screen and may be re-arranged to customize your working space. These positions are saved with the Save Preferences menu item. If these windows get covered up by other windows, you can bring them

to the front by selecting the appropriate item from the Windows menu.

When a NoteWriter file has been opened, or a new file created, the Score Window appears below the Image Palette. In addition, there is a Keyboard Window which may be used to play in notes with the mouse (see Chapter 8).

Unlike most Macintosh programs, NoteWriter allows windows to be active (and editable) even when they are not the front window. This feature allows windows (e.g. the Scroll Window and Keyboard Window) to be overlaid on the Score Window. To bring the score window to the front (which is necessary in order to re-size it or move it), click the title bar of the window.

Step 2: Set up a Page

To begin working on a new document, select New from the File menu. The following dialog box appears:

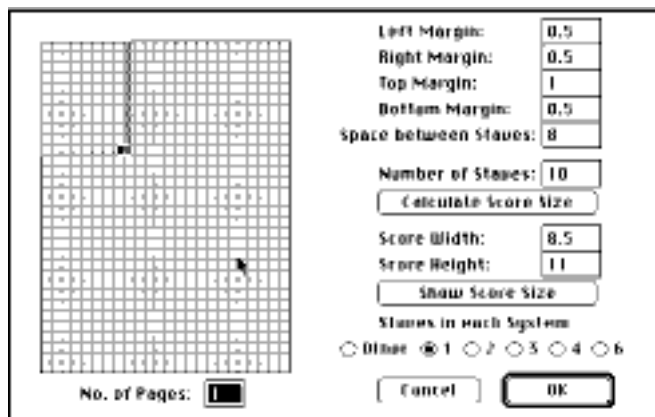



Fig. 2.3: Page Set-up Dialog

This dialog box allows all aspects of the basic NoteWriter page to be specified. Each page of a NoteWriter document can be set to have a physical size of from 3.5" to 32" in height and from 3.5" to 24" in width (in increments of .5"). If you prefer to work in centimeters rather than inches, click on the centimeter radio button.

Setting Page Size


Before beginning, you should know (or set) the paper size and page orientation you intend to use when printing. By default, you will be printing on letter size paper in portrait orientation (11" tall, 8-1/2" wide). If you intend to print in landscape orientation or to use another paper size, use the Page Set-up... menu item to indicate this before setting up your new page.

The initial page size can be set either by typing the number in the Page Height and Page Width text boxes or by dragging the page outline by the handle in the bottom-right corner. (Each square in the grid is equivalent to 1 square inch in the document.) If you type values into the Page Height and Page Width boxes, you can see the resulting document size by clicking the *Show Score Size* button.

 In the Page set-up dialog box, the grid allows a maximum page size of

24" X 32". If you require a larger page, you can enter a number (up to 48) in the Page Height and Page Width text boxes and click *Show Score Size*.


You can also select the number of staves you want on a page and NoteWriter will automatically calculate the page size for you.

 Pages set-up this way will normally be printed at some degree of reduction so that they will fit properly on the printed paper. Since some dot matrix printers do not allow variable reduction sizes, this method is recommended only for use with laser printers or printers with a wide range of printing reductions.


You should now set the number of pages you want for your score. (You can, of course, always add or delete pages at any time while working on a score.)

Setting up Multiple Pages

When a score is set up, you can specify the number of pages (up to one hundred) in the document.

 The number of pages in NoteWriter documents are limited by the amount of free memory in your computer. In order to avoid excessively large files and reduced efficiency in operating the program, it is recommended that large scores be divided into several smaller files of 10 pages each.

To scroll through pages, use the left and right arrows in the bottom-left corner of the score window. The current page is displayed in the page icon. The arrows will be black if there are additional pages before or after the current page. To jump to a different page use the *Go To Page..* menu item from the *Document* menu and type the desired page number. To add a page to the end of your document, use the *Add Page* menu item. The new page will be added with the original page set format (page size, staves, clefs, braces etc.).

 When reading old NoteWriter files (version 1.0 - 1.3), it is possible to add new pages, but not all page format information will be recreated on the new pages. The additional material can be copied from the original page.

To insert a page in the middle of a score use the *Insert Page* menu item. The page will appear **in front of** the current page. To delete a page, use the *Delete Page* menu item. A dialog box appears to ensure that you want to remove the page.

Setting Staff Format

The Space Between Staves item determines the distance (in staff spaces) between the bottom of one staff and the top of the next. The number of staves in each system is also set with this dialog box. The four staff margin boxes determine (in increments of .5") the distance that staves will be inset from the edges of the page.

For standard staff configurations, a series of dialog boxes follow which allow the clefs in each system and the key signature to be set. If a two-staff system is specified, then you will also be asked to choose between straight and piano braces; if single staves are specified, you will be asked whether you want a barline at the left edge of the staves and if a three-staff system is specified, you can choose between vocal-piano or instrumental layout. Click the OK button when you are ready to continue. If you want to create your own staff format or if you want to begin with a completely blank page, you should select the *Other* button. When *Other* is selected, the following dialog box appears:

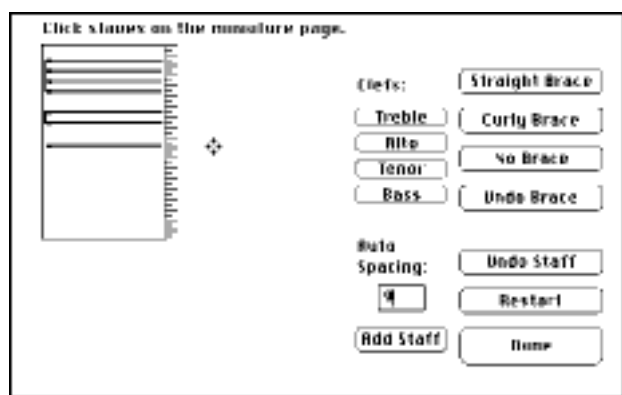


Fig. 2.4: Custom Page Set-up Dialog

Adding Staves

Clicking inside the miniature page adds a staff to the document. In

addition, the placement of staves can be controlled with the Auto Spacing setting. Rather than freely clicking the staves on the miniature page, you can set the distance between staves (number of ledger lines) in the Auto Spacing box and click the *Add Staff* button. The next staff will be placed the specified distance below the previous staff.

To use the *Auto Space* feature, at least one staff must be entered by clicking on the miniature page.

Removing Staves

A staff may be removed with the *Undo Staff* button, and you may clear all staves and braces by clicking the *Restart* button.

Adding Clefs

Clefs can be specified for each staff entered - the clef button should be selected after the staff has been added to the miniature page. (Clefs are indicated on the miniature page by small rectangles at the beginning of the staff.)

Grouping Staves

Staves may be grouped (with a Straight Brace, a Curly Brace or with No Brace - a single barline) by clicking the appropriate button. Braces are drawn from the first non-braced staff to the last entered staff; you indicate braces as you are entering the staves.


Selecting the *Done* button causes the score to be drawn.

Barlines joining the left edges of the staves may be added directly on the score with the Draw-Line tool. Single (or multiple) horizontal lines for percussion parts may also be added with this tool.

If your page does not turn out exactly the way you want it, you may alter the staff positions by dragging them (refer to the editing procedures in Chapter 4). Also, you can change the size of the entire score or an individual page by selecting *Change Page Size* from the *Document* menu.

After the Custom Page Set-up dialog box has been closed, the Key Signature dialog box appears. To choose Key Signatures, click on the appropriate button and the select *Done*. You must have a Clef set for a key signature to appear. Staves without a Clef will not have a

key signature assigned. However, once the score has been created, key signatures can be added manually.

 **Key Signatures for treble and bass clefs are transposed to alto and tenor clefs. This means that some key signatures (especially with tenor clefs) require that some accidentals be manually moved to the correct octave.**

Step 3: Use the Commands and Tools

The Command Window



Fig. 2.5: Command Window

The Command Line shows the current Notewriter command. The text which appears here indicates what image will be drawn when the mouse button is clicked. This command remains in effect until it is replaced by a new command. The Image Palette, the Command Window or the Macintosh keyboard can be used to enter the Notewriter command. Since commands are generally short mnemonic codes for the music images, 1 - 4 characters (a maximum of 8) are sufficient.

A display of Notewriter commands along with their associated images is available with the Command List menu item in the Windows menu. Clicking on one of the commands in the Command List dialog automatically places it on the Command Line.

The palette of tools located to the right of the Command Line indicates the current function mode of Notewriter. Each of the tools has a specific drawing or editing activity associated with it. The active tool (i.e. the current Notewriter function) appears highlighted on the Palette - to change functions, simply click the appropriate box.

The Notewriter tools with their associated cursors (from left to right) are:





















Tool	Palette Icon	Cursor
Insertion		
Select-Rect		
Select-Region		
Text		
Eraser		
Draw-Rect		
Draw-Oval		
Draw-Line		
Vertical Guide		
Horizontal Guide		

Fig. 2-6: Notewriter Tools and Cursors

Insertion tool


The Insertion tool (target cursor) is used for adding music images. When the cursor is clicked in the document, the center of the target becomes the current drawing position the image will be placed at this coordinate. This tool is automatically activated when a character is typed on the computer keyboard (except when you are in Text mode) or when an item in the Image Palette is selected. The program begins in Insertion mode.

Select-Rect tool

This tool (arrow cursor) is used to select Notewriter images for editing. As the cursor is dragged, a highlighted rectangle appears. All Notewriter Control Points within the rectangle are considered to be selected. The document will scroll if you drag the rectangle past the edge of the window. Note: The Return key can be used to switch between Select-Rect and Insertion modes.


Select-Region tool

This tool (reverse-arrow cursor) is used to select a variable-shaped region for editing. Hold the mouse button down and draw around images with the pencil. The region becomes highlighted when the mouse button is released. As in the case of Select-Rect, all Control Points within the region are considered to be selected. This tool allows precise editing of images in close proximity to one another.

 When using either the Select-Rect or Select-Region tools, multiple areas can be selected by holding down the Shift Key and selecting another area.

Text tool

The Text tool (I-Beam cursor) allows standard Macintosh text boxes to be created. The font, size, style and justification are set by the Text Format menu item in the Control menu. When the Text tool is selected, an I-Beam cursor will flash at the current text insertion point. You may create a new text box by clicking anywhere on the screen, or click within an existing box to edit that text. The initial size of Text boxes can be controlled by the user. If the mouse button is held down during placement of the Text box, the user can move the mouse to the right and create a text box of any length. (The document will scroll if necessary). The height of the text box is set to the current line height. Text will wrap around automatically as the text reaches the right edge of the text box and additional lines are added to and removed from the text box as needed. The size of text boxes is adjusted after a new text format is set. In addition, the overall size of the text box can be adjusted by selecting the bottom-right corner of the text box and dragging it. The position of the entire box may be moved by selecting the top-left corner and dragging it.

 All text contained in the text boxes, whether or not it is visible on the screen, will appear when the document is printed. This allows you to hide large text fragments (by reducing the size of the text box) if desired.


Eraser tool

The Eraser tool removes images whose first Control Point (i.e. first mouse click) is under the cursor while the mouse button is depressed. If you are not sure where the first control point is located, you may display the control points temporarily with the Show Control Points menu item. (First Control Points are displayed in white, others in light gray).

Graphics tools

The Graphics tools (cross cursor) is used to draw standard graphic images (rectangles, ovals, and lines) on the screen. Selecting the Draw-Rect, Draw-Oval or Draw-Line boxes causes the corresponding image to be drawn while the mouse button is held down and the cursor moved. Holding the shift key down while drawing constrains

the images to squares, circles and horizontal or vertical lines. The current line thickness is controlled by the Set Line Width menu item. Ovals and rectangles can be drawn as framed (with different line thicknesses), filled in black or as erasures. These graphics tools are intended to allow you to create simple images from within Notewriter. To create more complex images you can use a graphics program such as SuperPaint™, import the graphic and store it in the Symbol Library (see Chapter 3).

 **Although dotted lines may appear somewhat distorted on screen, they will print correctly on the laser printer.**

Vertical and Horizontal guide tools

These guide tools are used for placing vertical and horizontal reference guides on the document. When this tool is active, a dotted line is drawn the entire length or height of the document. Clicking on the line a second time removes it. Clicking on the small rectangle in the top-right corner of the Guide box clears all the corresponding guides from the page. Vertical guides are very useful for aligning beats, measures and other images down the page. Horizontal guides can be used to line up text boxes or other images across the page. Up to 40 vertical and horizontal guides may be active on each page of the document. All guides are saved with your file.

Image Palette



Fig. 2.7: Image Palette

The Notewriter Image Palette contains some of the most commonly used music images. When one of the boxes in the Palette is selected, the corresponding command is entered into the command line and the box is highlighted.

Additional characters may also be added to the command with the keyboard. (E.g. Selecting the angled beam box will cause "a" to be entered as the Current Command - if you require two beams, type "2" on the keyboard and the number will be added to the command.)

The accidental and dot items are used to extend the Current Command with "." "sh" "n" and "fl", or to remove the extensions if they exist. (E.g. If you click the quarter note image followed by the sharp image, followed by the dot image, the Current Command will be "qsh." -- used to draw a dotted quarter note with a sharp in front of it. Clicking the sharp image again will cause the Command to be altered to "q".)

The Image Palette contains only a small subset of available images -- a complete list of Notewriter images is available with the Command List menu item. The Image Palette, the Keyboard and QuickScrawl routines (discussed in Chapter 7) may all be used interchangeably to draw images on the score.

Scroll Window

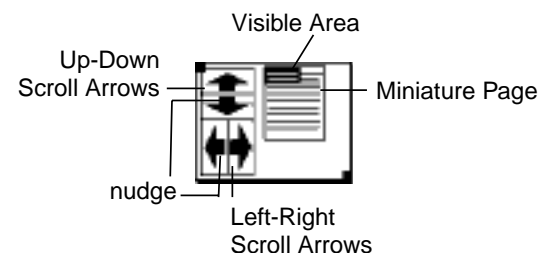



Fig. 2.8: Scroll Window

The Scroll Window was designed as an enhancement to the standard Macintosh scroll bars. Placing all scrolling functions in one area and making this window moveable reduces the amount of mouse activity during editing. Clicking in the Scroll Arrow boxes causes the document to move by increments left, right, up or down. Clicking the stem of the arrow will nudge the document a short distance in the desired direction. You can also, of course, use the standard Scroll Bars to move your document.

The Miniature Page shows the position of staves and braces in the document and the visible portion of the document (in black). The visible portion of the document can be moved by dragging the black rectangle to a new location. The Miniature Page and the visible rectangle reflect the current page size and window size.

 **The Notewriter Score Window can be re-sized by selecting the bottom-right corner of the document and dragging it.**

Step 4: Draw The Music Images

To draw images on the score, the Insertion tool must be active. As mentioned above, typing at the keyboard, clicking in the Image Palette, or clicking on the item in the Command Window causes the appropriate characters to appear on the Command Line. This text constitutes the Current Command and is used to indicate which image you wish to place on the screen. The mouse is moved to the desired location, and a click (or two or three) of the mouse button will draw the image on the screen. Chapter 3 deals systematically with all Notewriter images and the methods for positioning them. For now, it is sufficient to say that the image specified by the Current Command is drawn when the required number of mouse clicks have been generated.

Generally speaking, images that are fixed to one location (e.g. dynamic markings and rests) require only one mouse click, whereas images which have variable height or width (e.g. notes, beams, staves) require two mouse clicks, and ties and slurs (which have a beginning, an end and a central point) require 3 mouse clicks.

To use Notewriter effectively, you must be familiar with the commands for the commonly used images (many of which are included in the Image Palette) and the number of mouse clicks required to draw those images. You may wish to move ahead to Chapter 3 and experiment with some of the Notewriter images before continuing.



You can continue to place copies of the same image while it remains as the Current Command. Also, selecting Undo from the Edit menu will remove the previous change to the screen, but will not alter the Current Command.

Step 5: Edit the Score

One of the most powerful features of Notewriter is that images may be placed anywhere on the screen in any order, and that all images (or groups of images) may be adjusted or modified at any time. Also, all Notewriter images (including staves, slurs, text and graphics) are subject to the same editing procedures.

The Select-Rect and Select-Region tools are used for specifying the portions of the score to be edited. The Select-Rect tool selects a rectangular area, while the Select-Region tool is used to draw freely around groups of images. In both cases, the selected area appears highlighted.

In addition to the standard Macintosh editing procedures (Cut, Copy and Paste), Notewriter includes Move, Adjust, Stretch-Compress and Delete routines. In accordance with Macintosh conventions, editing is always done on selected images -- you must first indicate (with the Select-Rect or Select-Region tool) what material is to be operated upon, then choose the appropriate menu item. All editing routines are discussed in detail in Chapter 4.

Step 6: Save the Document

you are working on your score you should save it to disk as often as possible. Using *Save* (from the *File* menu) will save your score in Notewriter format. When using *Save As...* you are asked which format you wish to save your document as - NoteWriter format (with a new name), PostScript format or MacPaint format. Choosing the PostScript format will allow you the options of saving your document or the current page of the score as a PostScript document or as an Encapsulated PostScript (EPS) file. PostScript documents are designed for downloading to other PostScript printers or for exporting your score to a non-Macintosh computer. EPS file are designed for exporting pages of score into page layout programs.

When a document is saved, the page set-up features (i.e. the paper size, reduction percentage, etc.) and the vertical and horizontal guide positions for each page are saved with the document.

Step 7: Print the Document

Notewriter documents may be printed at any time provided that the Chooser desk accessory is set for the printer you are using, and that the printer is properly connected. If you are printing to a PostScript printer (i.e. in High-Quality mode), the Sonata font should be located in the System Folder on your start-up disk. To print to a PostScript printer select the Laser Print menu item from the File menu. To print to a non-PostScript printer select the Draft Print menu item from the File menu. It is a good idea to save your document prior to printing.

Notewriter uses the standard Macintosh dialog boxes under Page Setup in the File Menu for printing. In the most recent version of these dialogs, you may set the paper size, orientation, reduction size, the number of copies and other options. A particularly useful setting on the LaserWriter dialog box is *Larger Print Area*. This option decreases the size of the margins on the page and gives you a full 8 inch width on the printer.

A gray rectangle on the screen indicates the current print area. Changes to Page Setup affect the size and shape of this rectangle. All material within the rectangle will be printed at the current Page Setup specifications. The position of the grey rectangle may be adjusted in the Overview window (select *Show Overview* from the *Windows* menu). In the Overview, the current printing area appears highlighted. You may drag this highlighted area to a new location.

Large documents may be printed in pieces (called tiles). Normally, this requires that a portion of the document be printed (at any reduction size) and the origin (i.e. the position of the top-left corner of the work area) be shifted (as described above) and another portion of the document printed. The number of tiles depends upon the size of the document, and the reduction and enlargement percentage. The table in Chapter 5 may be helpful in organizing tiling for large documents.

 If you print a page on a laser printer and get a score with letters instead of music symbols, the Sonata font is not resident in the printer. You should save the file, download the Sonata font to the printer, and try to print the original document again.

Step 8: Quit the Program

When you have finished working with NoteWriter, select *Quit* from the *File* menu. You will be prompted to save the document if you have not already done so, and you will return to the Macintosh Desktop™. If you want to save the document in Encapsulated PostScript format (EPS) or in Paint format, you should select the *Save As...* item from the *File* menu prior to quitting. Remember to save the document in NoteWriter format as well or you will not be able to open the document again from NoteWriter .

Chapter 3: Creating the Score

This chapter discusses the standard score entry procedure for NoteWriter. Although more efficient entry can be achieved using the on-screen Keyboard and QuickScrawl routines (refer to Chapter 7 for details), it is recommended that users begin by becoming familiar with the standard entry method before working with the more advanced input methods.

Standard Entry Method

In order to add a music image to the score, you must be in Insertion mode - click the target icon in the Command Window if it is not already highlighted. The procedure for drawing is to first indicate the image to be added, then move the cursor and click the mouse at the appropriate location or locations on the screen. There are three basic categories of NoteWriter images: those that require only one cursor position for placement, those that require two, and a few that need three or more. The images which require more than one mouse click do so because more than one screen position must be defined before the image can be correctly drawn (beams are an example of a double-click image -- you must specify the left and right boundaries of a beam).

Setting the Command

All typing on the keyboard (except when you are in Text mode) affects the Current Command. The Backspace (or Delete) key may be used to erase letters, or you can use the mouse to insert or delete text as you do in other Macintosh applications. As much as possible, commands were designed either as a mnemonic of the musical term (i.e. "q" for quarter-note,) or they use a character that resembles the image (i.e. "<" for crescendo or decrescendo). Most NoteWriter commands are one to three characters in length, and fit easily on the Command Line.

With the exception of text, Commands should be entered as lower case letters without spaces unless otherwise specified. (E.g. "qsh" is a correct Command "q sh" and "QSH" will not be understood by NoteWriter.) If you discover that a Command is incorrect while you are positioning the image or if the image fails to appear on the screen, the Backspace key will clear the Command and you can re-enter the correct Command. Also, once an image has been drawn, additional

typing will replace the previous Command.



Fig. 3.1: Image Palette

Clicking in one of the boxes on the Image Palette is equivalent to typing the corresponding Command. Except for the modifiers (add-dot, add-sharp, add-natural and add-flat boxes), the new Command replaces the previous one. The four modifier boxes serve as extensions to other Commands. They cause the appropriate text to be added to the existing command if the extension is appropriate. Re-selecting one of these boxes will remove the extension. When the Image Palette is used to enter commands, the current selection and the current modifiers are highlighted.

The Command List (in the Windows Menu) contains other available NoteWriter images in boxes. Clicking on a box automatically loads the image as the Current Command and closes the dialog box. (See Appendix 4 - Command List).

Another method of entering symbols is to paste them into your score from one of the Symbol Libraries. (See the end of this chapter for details on how to do this.)

The Insertion Cursor

The NoteWriter cursor has been designed as a circle with cross-hairs. The hot-spot or active point is the pixel (or picture element) at the centre of the circle. This is the point from which and to which most images are drawn. Notice that the diameter of the circle is the same as the distance between staff lines. When the cursor is superimposed on an existing image, overlapping pixels become white. This allows you to see clearly whether the cursor is properly aligned in a staff space or on a line. (N.B. When you are correctly centred in a stave space, the top and bottom edges of the cursor will disappear.)



Fig. 3.2: Correct cursor position

As with any Macintosh program, a clean mouse and a smooth working surface make the task of positioning images much easier.

Placing Images

In NoteWriter, the number of cursor positions required to draw an image and the accuracy with which they must be placed has been kept to a minimum. The program will work much more efficiently once you get a sense of what information NoteWriter requires in order to draw accurately and what it can assume or infer from what you give it. In most cases, the first cursor position is the most crucial. The second and third positions (when required) are usually drawn relative to the first. For example, when drawing notes, it is important that the note head (i.e. the first mouse-click) be placed with some accuracy, but the second click (for the stem length) indicates only vertical position of the image. Also, since most images are adjusted to the grid, a certain degree of inaccuracy is tolerated by the system.

The Grid

NoteWriter has an automatic adjustment feature which aligns most images to an invisible grid. When the grid is engaged, images will be vertically adjusted to the closest staff line or space and horizontally to the closest grid point (4 pixels). This compensates for inaccuracies in manual placement and aids in the vertical alignment of images. If desired, this feature may be turned off by selecting *Grid* from the *Control* menu.

Disengaging the grid may be necessary for precise placement or adjustment of some images. However, it is **strongly** recommended that the grid be kept on except when fine adjustments are needed. If you enter images with the grid off, you may find that they are not properly aligned or joined when the document is printed

The Vertical Alignment Bar

The Vertical Alignment Bar (V. A. Bar) consists of a vertical dotted

line with a box containing a staff and ledger lines affixed to it

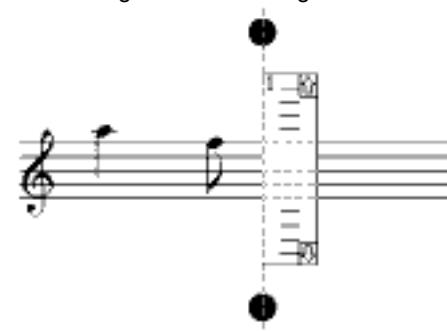


Fig. 3.3: Vertical Alignment Bar

When the V.A. Bar is engaged, all notes and rests are aligned on the vertical line -- other images are still drawn at the cursor position. The V.A. Bar may be moved across the page using the *Space* and *Tab* keys (reverse direction with *Shift-Space* and *Shift-Tab*) and small increments with the *~* key. The increments of this move are determined by the *Alignment* dialog box (which is called by selecting the *Set Alignment* item in the *Control* menu).

The V.A. Bar sits on the staff, and may be used to enter pitches above and below the staff more accurately. The box may be shifted to other staves by clicking the small arrows in the top-right and bottom-right corners of the box. Moving the box up and down in this manner causes the document to scroll so that the next staff is clearly in view - the current staff number is displayed in the upper left corner of the V.A. Bar. The V.A. Bar is turned on and off by the *Alignment* menu item in the *Control* menu.

In addition, the Vertical Alignment Bar may be used in conjunction with the on-screen *Keyboard*. The Vertical Alignment Bar is turned on and off by the *Alignment On / Off* menu item in the *Control* menu. The Vertical Alignment bar can be set to increment automatically when notes are entered by setting the *Auto-Increment* menu item in the *Control* menu. (See Chapter 6)

Defaults

As an additional alignment aid, many images, such as rests and barlines, are automatically adjusted to their normal drawing position on the closest staff. If unusual positioning is desired then the

Defaults may be disengaged by selecting the *Defaults* item from the Control menu (and thereby removing the checkmark from the menu item.)

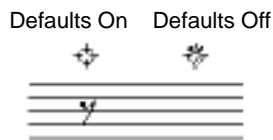



Fig. 3.4: NoteWriter Defaults

Figure 3.4 shows the cursor positions and the resulting drawing positions of an eighth-note rest with Defaults on and off. As you can see, Defaults cause the rest to be placed in normal position in the closest staff.

Another important Default is the automatic association of notes with the closest staff. Normally, NoteWriter will decide which staff a note "belongs to" and draw ledger lines to this staff if needed. If you do not want a note to be associated with any staff, then disable Defaults before adding the note. A complete list of NoteWriter Defaults is given in Chapter 6.

 **As in the case of the Grid, Defaults should remain engaged except when it is absolutely necessary to turn them off.**

Control Points

Every NoteWriter image has one or more Control Points associated with it. These points are the essential drawing coordinates of the image, and are vital to all the editing routines. In most cases, the Control Points are the locations at which the mouse button is clicked when the image is drawn, or where the image initially appears on the screen. Normally, single-click images have one Control Point, double-click images have two, and triple-click images have three. Unlike some other graphics applications, the Control Points (or handles) are not normally visible on the screen. (You may view the Control Points temporarily by selecting the *Control Points* menu item.

Primary control points are displayed as white boxes, while other points are grey.) The reason for not normally showing control points is that editing can easily be done intuitively with NoteWriter. It is not

necessary to consciously grab handles to adjust images. As the drawing methods for the various symbols are discussed, any unusual locations of Control Points will be mentioned.



Figure 3.5 Control Points

Commands for Single Click Images

Single click images are those which require only one cursor position for placement.

As a general rule, they are drawn directly at the cursor position and the Control Point of the image is placed at this location. However, there are some images (e.g. barlines and rests) that will normally be adjusted to the closest staff and some images (e.g. barlines, full staves, rehearsal numbers, and key signatures) have two or more Control Points despite the fact that only one was required to draw the image. The additional control points are provided so that the image can be adjusted more easily.

Rests

The commands for rests all have "r" as the first letter. The second letter distinguishes the kind of rest (i.e. "rq" = a quarter rest). In addition, a dot "." may be added to the command (either by typing or clicking on the Image Palette) to indicate that the appropriate rest is to be drawn with a dot following it.

Rests will default to their normal position on the staff. To position rests elsewhere you must first deactivate the NoteWriter Defaults (by removing the checkmark from the *Defaults* item in the *Control* menu), then place the cursor at the desired location and click the mouse button.

Rests are aligned to the Vertical Alignment Bar when it is engaged. Thus, when Defaults are on and the Alignment Bar is active, clicking anywhere on the screen will cause the rest to appear vertically at the centre of the closest staff and horizontally at the Alignment Bar. The Control Point for a rest is located at the centre of the image.

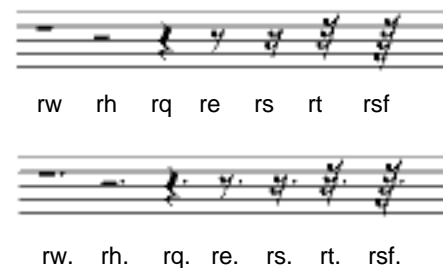


Fig. 3.6: Rests

Clefs

Clefs are drawn to the right of the cursor. When NoteWriter Defaults are engaged, the normal sized clefs will be drawn in normal position on the staff. To place these clefs elsewhere (as is necessary for soprano clefs for example) you should deactivate the Defaults and click the cursor on the appropriate line. The normal drawing position is the centre staff line. Small clefs (which have a "!" prefix) are not automatically adjusted to staves. The Control Point is located at the left-centre (normally at the centre staff line) of the image.

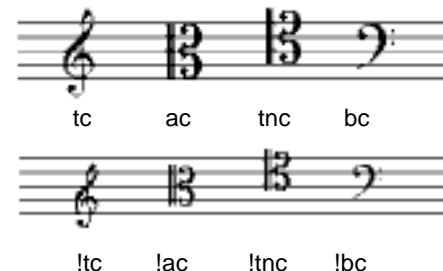


Fig. 3.7: Clefs

Dynamic Indications

The first letter of the dynamic mark is centred on the cursor. The subsequent letters, if any, are drawn to the right of the cursor. Neither the Grid, Defaults, nor the Alignment Bar affect the position of dynamic indications. The Control Point is located at the cursor position.

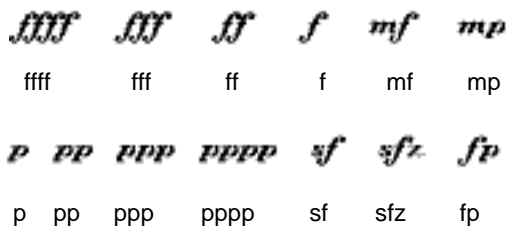


Fig. 3.8: Dynamic Indications

Accidentals

Accidentals may either be added as independent images, or they may be included as part of a note image. There are certain editing advantages to ensuring that accidentals are associated with notes rather than drawing them as independent images. However, in some instances, it may be necessary (or desirable) to add accidentals as separate images.

To draw an accidental, click the mouse button where you want the image to appear. All accidentals are drawn directly over the cursor at the closest staff line or space. In addition to the regular accidentals, NoteWriter includes two sizes of smaller accidentals for grace notes, and 1/4 sharps and flats for use in contemporary music scores.

The procedure for having accidentals included as a component of a note is to create a compound Command (i.e. a Command which includes both the note command and the accidental command - "qsh"), or to select an existing note (with the Select-Rect or Select-Region tools) and choose the appropriate item in the *Modify* menu to add an accidental to the selected notes. Also, accidentals may be added with the on-screen Keyboard and with Numeric Keyboard Input.

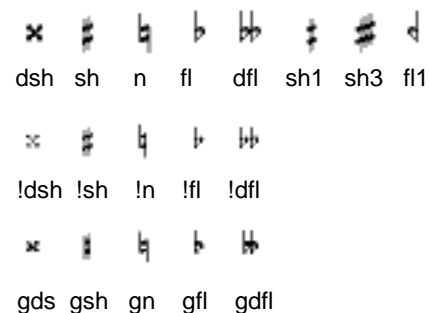


Fig. 3.9: Accidentals

Key Signatures

Key signatures at the beginning of each staff are normally generated during the initial page set-up routines.

If you want to add a key signature elsewhere in the document, or if you specified your own document layout (without key signatures) you may use the key signature commands. The command "ks" draws sharp key signatures and "kf" draws flat key signatures. The number which follows these characters determines the number of accidentals to be drawn. Thus, "ks2" draws the key signature of D major / B minor. The cursor should be placed on the pitch B (middle line of the treble clef, second line of the bass clef, etc.) at the horizontal position of the first accidental. Some key signatures (in alto and tenor clefs) may require that some accidentals to be shifted up or down an octave -- this is easily accomplished with the Move procedure.



Fig. 3.10: Key Signatures

Text

The majority of text in NoteWriter should be entered by creating standard Macintosh text boxes with the Text tool. The method for doing this is discussed later in this chapter. There is, however, a second method that can be very useful for adding short fragments of text to the document. The size of the text is taken from the current setting in the *Text Format* dialog box (in the *Control* menu.) The font used to draw text is Times-Roman, and the maximum length of the

text segment is 8 characters. To add text using this method, type a single quote - ' - followed by the text you want displayed, and click the mouse once at the location you wish the text to begin. The bottom-left corner of the first character will be placed at the cursor position. This procedure is very useful for adding fingerings, small measure numbers, analytical letters, single syllables, etc. For longer passages, and to utilize other styles and fonts, use the Text tool. The size of single-click text fragments can later be changed by using the *Modify Text* items in the *Ext.* menu.

Time Signatures

The command for time signatures consists of the numerator and denominator separated by a slash - / (i.e. "4/4"). Any time signature with one or two digits in the numerator and denominator is possible in NoteWriter. The cursor should be placed on the centre line of the staff. Common and cut time may be drawn with the commands "c" and "c/".

The time signature images may also be used as numbers (up to 4 digits). This is useful for constructing complex time signatures (e.g. 6 + 3 over 8). These number can be entered separately and the plus sign added with the '-type text routines described above. It is also possible to create a time signature with a number over a musical note if desired. The first digit is centred on the cursor.

Large time signatures (for chamber and orchestral scores) can be created with a large point size in a regular text box. (Try setting the Sonata font to 72 point and typing the numbers.)

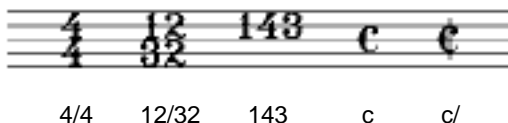


Fig. 3.11: Time signatures

Ledger Lines

Although ledger lines are available as separate images, it is not normally necessary to use this command since ledgers are added automatically when notes are entered. Nevertheless, they are available should you require them for any reason.

The command for ledger lines consists of "l" followed by the direction

("u" for up and "d" for down), followed by the number of lines to be drawn. Therefore, the command "lu4" is used to draw four ledger lines above the staff, the command "ld5" is used to draw five ledger lines below the staff). The cursor should be positioned on the top staff line for upper ledger lines, and on the bottom staff line for lower. As with many NoteWriter commands, there is a default. In this case, the default direction is up, and the default number is 1. If either the direction or the number is omitted, the default is used.

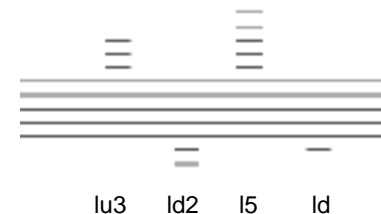



Fig. 3.12: Ledger Lines

 **As long as Defaults are engaged, ledger lines will automatically be added to all notes. You may change the staff to which notes are associated with the *Next Staff* and *Previous Staff* menu items.**

Barlines

Barlines "bl" and double barlines "dbl" are drawn by specifying the horizontal location in (or above) the appropriate system. NoteWriter will take care of drawing the barline (or barlines) between the top line of the top staff and the bottom line of the bottom staff in any established staff system.

The commands "|." and ".|" are used to draw begin-repeat and end-repeat barlines. The repeat dots appear on every staff in the system. Although barlines are drawn with only one click, they have two control points (at the top and bottom of the line), so that they may be edited more easily.

If you deactivate Defaults, all barlines will be drawn down from the cursor position the standard staff height.

If you wish to group staves differently from the way they are formatted on the page, you may use the Line tool or the command "|" to add vertical lines anywhere in the document.



Fig. 3.13: Barlines

Articulation Marks and Other Images

Most of the following images are centred on the cursor. The exceptions are grace notes which require the cursor to be centred on the appropriate staff line or space (they are all drawn with flags up) and string tremolo beams which are drawn in a downward direction from the cursor. All of these images have a single Control Point at the cursor location.

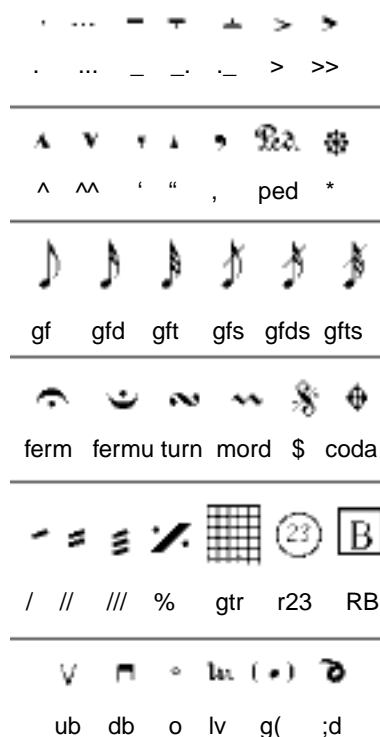


Fig. 3.14: Other Single-Click Images

The two rehearsal symbols (in a rectangle and an circle) actually consist of two separate images -- the number (or letter) as a 'type text item, and the graphic image (rectangle or circle). Either or both of

theses components may be adjusted or moved. The guitar chord image is drawn without any circles for fingers. It is recommended that the circles be added by drawing them with the circle tool. Set the line width to a thick setting to place the solid circles and use the "harmonic" symbol in the Command List for the open strings. You can also use the extensive set of chords provided in the Symbol Library - see the end of this chapter for details.


The last image in Figure 3.14 (";" followed by a single character) is for creating lute tablature and uses a lute font (which was designed by Lyle Nordstrum). If require this font, contact Opus 1 Music Inc. for information on how to obtain it.

Global Commands

There are a number of single click images which can be drawn on every staff of the page by adding the global prefix "&" to the command. Specifically, the images affected are barlines and time signatures.

NoteWriter Image	Command	Global Command
Barline	bl	&b
Double barline	dbl	&dbl
Begin Repeat	. .	& . .
End Repeat	.	&.
Common Time	c	&c
Cut Time	c/	&c/
Time Signature	##	&##
Key Signature	ks#, kf#	&ks#, &kf#

When any of these commands are altered to global commands (i.e. 4/4 is replaced by &4/4), the image will appear at the horizontal location of the cursor and at the normal location on every staff on the page. These commands are especially useful for adding barlines and time signatures to large scores. In the case of barlines, the lines are drawn between the top and bottom staves of each staff groups that were established when the document was set up. If you disengage the Defaults, barlines will be drawn on all staves individually.

 Because globals are drawn as a series of separate images, they cannot be removed by selecting Undo. To remove the images select the Remove Last Image menu item repeatedly until all copies of the image are gone.

Commands for Double Click Images

Double-click images are those which require two cursor positions in order for the symbol to be drawn. Notes and beams are examples of double-click images.

In most cases, more accuracy is required in placing the first mouse position than the second. For example, a quarter-note "q" will always have its stem drawn vertically up or down from the first position even if the second position is not directly above or below the first. Thus, it is important to indicate the correct horizontal and vertical position for the first click, but only necessary to specify the correct height for the second. The two Control Points for double-click images are located at the extremities of the image -- (e.g. note head and end of stem or flag for notes, left and right edges for beams).

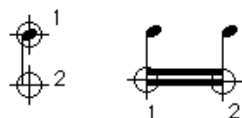



Fig. 3.15: Control Points for Double-Click images

As a general rule, you should enter horizontal images by placing the the left position first. Since many NoteWriter editing procedures operate only on images whose first Control Point is selected, following this protocol will simplify editing -- you can assume that the left edge of a beam or horizontal line is the first Control Point.

Notes and Chords

All notes, except the whole note and double whole note (breve), require two mouse clicks. The first mouse click places the head of the note, and the second draws the stem (or flag) to the height of the second cursor position.

 A double-click with the command "q" or a single click with the command "q1" draws a solid notehead without a stem. You can use this image to add additional notes to a existing stem when creating chords.

The standard stem and flag height is drawn when the second mouse click is less than octave above or below the position of the notehead. (The height of the stems and flags can be adjusted later if desired.)

The commands "qq" and "hh" can be used to draw shorter stems (in the direction indicated by the second click.) Variable length stems allow you to more accurately draw chords, notes in extreme registers and notes with no stem.)

When beams are added to notes (either manually or with the *Beam Notes* menu item), the stems will be adjusted to meet with the beam, so it is not necessary to be overly concerned with the initial height of the stem or flag.

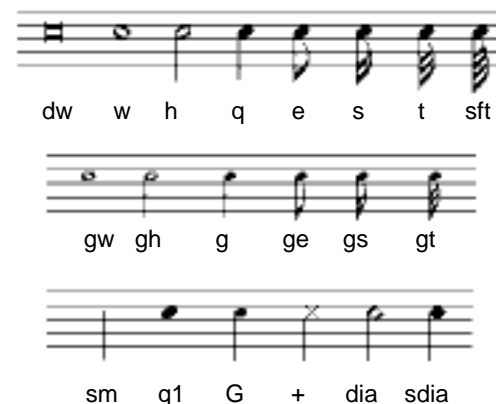



Fig. 3.16: Notes

The command "sm" may be used to draw a stem without a notehead on it. It should not be used to extend existing stems - use the Adjust editing procedure to alter the length of stems.

Grace notes appear in two sizes: "g" grace notes are approximately 1/2 the size of regular notes and "G" grace notes are 3/4 the size of regular notes.


 Immediately after notes have been entered, they may be shifted up or down or right and left with the cursor (arrow) keys on the keyboard.

Automatic Ledger Lines

When notes are entered, they are normally associated with the staff closest to the note head, and ledger lines are drawn if the note is above or below the staff. The Vertical Alignment Bar can be used to help position notes in extreme registers. Occasionally, when notes

are entered (or when pasting notes into the document) they may become associated with the wrong staff -- i.e. ledger lines will be drawn up to the previous staff rather than down to desired staff. If this occurs, select the incorrect notes (with the Select-Rect or Select-Region tools) and choose the *Previous Staff* or *Next Staff* items from the *Modify* menu.

If you do not want ledger lines added automatically, disable the Defaults temporarily.

 Occasionally unwanted ledger lines may appear. To remove them, use the *Remove Ledgers* menu item from the *Modify* menu.

Compound Commands


The following suffixes may be added to any of the note commands to have a dot or an accidental associated with the note.

Command addition	Image added
.	Dot
sh	Sharp
n	Natural
fl	Flat

These extensions may also be added to the command by clicking the appropriate box in the Image Palette.

Alternatively, it is possible to enter notes without accidentals, and to add the accidentals later by selecting the note and choosing one of the menu items in the *Modify* menu (e.g. *Add Double Sharp* or *Add Dot*). These menu items may also be used to alter accidentals at any time during editing. Accidentals which are associated with grace notes will be drawn as grace note accidentals.

Quarter tone accidentals must be added as independent images.

 Dots and accidentals associated with notes are considered to be modifiers. To remove these images, select the note (using the Select-Rect or Select-Region tools) and choose the *Remove Modifiers* item from the *Modify* menu.

Control Points for Notes

Since notes are the most important images on most scores, it is important to know where the Control Points are located for these images. The first Control Point is at the **centre** of the note head, and the second is located **directly above or below** the note head at the height of the stem. Please notice that the second Control Point is not located on the stem, but rather is positioned just to the left or right of the stem depending on the stem direction.

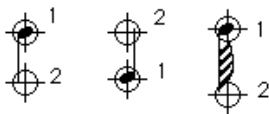


Fig. 3.17: Control Points for Notes

Flags

As you can see from Figure 3.17, flags are automatically drawn when you use the commands "e", "s", "ts", or "sft". Independent flags have also been included in NoteWriter, but will probably be used very infrequently. They are useful for rhythmic indications on tablatures or in contemporary scores. The Control points are located at the start of the stem and at bottom or top edge of the flag.

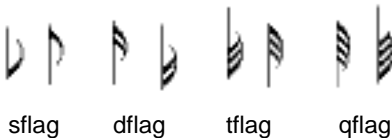


Fig. 3.18: Flags

Drawing Simple Beams

Beams can be drawn by hand, by selecting notes and choosing the *Beam Notes* menu item or they can be added automatically (by choosing *Auto Beam* from the *Control* menu.) See Chapter 4 for details on Auto Beam.


There are two categories of drawn beams in NoteWriter: angled beams (which use the "a" command) and horizontal beams (which use the "b" command.) Grace beams can be drawn with the "ga" or "gb".

 The beam in the Image Palette is an a-type beam.

To draw multiple beams, the number of beams to be drawn (up to 9) is added to the Command. (E.g. "b3" will draw three beams - thirty-second note beams.) Click the mouse on the stems of the first and last notes to be beamed, at the desired vertical positions. The specified number of beams will be drawn either from mouse position 1 to mouse position 2 in the case of a-type beams, or from mouse position 1 horizontally to mouse position 2. The stems of quarter notes, grace notes, x-notes and diamond notes are clipped or extended so that they touch the primary beam.



Fig. 3.19: Beams

 It is possible that notes may become joined to the wrong beam if they happen to be in too close proximity to the beam when it is drawn. If this happens, the stem of the note can be adjusted back to the correct beam (using the Adjust procedure). Note, however, that if you alter the position of the beam by adjusting, moving or pasting it, the note may again become joined to the beam.

Normally, NoteWriter decides which direction to draw the beams by looking at the location of the first Control Point. If the cursor was clicked below the middle line of the closest staff, then the program assumes that the notes are above, and beams are drawn in upward direction. If the cursor was above the middle staff line, then the beams are drawn in a downward direction from the Control Points.


 If a beam is drawn in the wrong direction, you may correct it by selecting the beam and choosing the **Flip Beam Direction** item in the **Modify** menu.



Fig. 3.20: Changing the Beam Direction

If you want control over the beam direction, or if there are no staves on the page, you may disengage the automatic beam direction routine by selecting (and removing the checkmark from) the **Defaults** menu item. With the Defaults disabled, the commands "b", "a" "gb" and "ga" cause beams to be drawn in a downward direction (i.e. above the notes) and double letters -- "bb", "aa", "gbb" and "gaa" cause beams to be drawn in an upward direction.

Drawing "Short" Beams

Short beams may be added to the left or right stems by adding "." (for the right stem) or "," (for the left stem) in the command. Short beams may be added to any beam type.

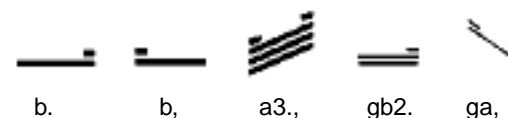


Fig. 3.21: Short Beams

Drawing Complex Beams

Rather than piecing together a series of beams, NoteWriter allows complex rhythmic configurations to be drawn as a single image. This procedure has a Command which begins with "b" or "a" and is followed by a list of the numbers of beams which will appear from left to right in the beam group. To draw the beam, you must click the mouse on the first stem (i.e. the left stem of the group), at every horizontal location where the number of beams changes, and on the last stem (i.e. the right stem of the group). Normally, you will click on intermediate stems which have a different number of beams on either side. A couple of examples will make this clearer: a rhythmic group of an eighth and two sixteenths requires the command "b12" or "a12" and is drawn with clicks on all three stems. A rhythmic group of an eighth, two sixteenths, two eighths and three thirty-second notes requires the command "b1213" or "a1213" and mouse clicks on the first, second, third, sixth and last stems (i.e. at all the places where a change in the number of beams occurs.)

Command: a12b1213
Click #: 1 2 31 2 34 5

Fig. 3.22: Entering Complex Beam Groups

Complex beams with short beams are drawn with additional mouse clicks a short distance to the right or left of the stem.

Command: a12131
Click #: 1 2 34 5 6

Fig. 3.23: Entering a Complex Beam Group with Short Beams

Drawing Single Beams

Single beams may be added with the commands: "sb" (horizontal) and "sa" (angled). These beams do not clip stems, so they may freely used to extend existing beams, or to create rhythmic accelerandi and decelerandi. The drawing positions of single beams are shown below:

sa sb

Fig. 3.24: Beaming Notes with Single Beams

Set Stem Clip

This item in the *Control* menu allows you to set the way that stems are

clipped when beams are added. You can set beams to clip notes in both directions (i.e. above and below the beam), in one direction only (as determined by the position of the beam) or to not clip stems at all.

Brackets for Rhythmic Groupings

Brackets are specified as being upper or lower (i.e. above or below the music) with the commands "[" or "]". To include a number in the centre of your bracket, add it to the command -- any two digit number can appear in a bracket. Alternatively, numbers (e.g. 5:4) may be added as text (using the '...' command or with normal text boxes).

[3]5[]12

Fig. 3.25: Rhythmic Braces

Lines

Although lines are usually drawn with the Draw-Line tool, they may also be drawn with the following commands:

Command	Type of line
	vertical
	broken vertical
-	horizontal
--	broken horizontal
\	any angle

In addition to these basic commands, a number (up to 9) may be added to the command to specify the thickness of the line. For example, the command "--3" would draw a broken horizontal line of three pixels thickness. Thick lines are drawn to the right and below the cursor position. The Control Points are located at the beginning and end of the line.

Vertical lines may be used to create various thicknesses and dotted barlines.

Line Erase

The commands "x", "y", and "xy" erase a line the thickness of the cursor in the following directions:

Command	Type of line
x	horizontal
y	vertical
xy	any direction

These commands should not be used to erase images (use the Eraser tool or Delete procedure to do this.) Rather, they are used to block out a portion of an existing image. For example, if you want to make a break in the middle of a beam or a slur (perhaps to avoid a collision), you can use the "y" command and click above and below the beam to make the erasure. Any images which were drawn prior to the erasure will be covered by the line, but additional images may be placed on top of the erasure. Conceptually, the erasures can be thought of as strips of white tape which are placed on the page. All images (including staves) can be covered by erasures.


 **The erasure routines are difficult to work with because you are essentially dealing with invisible lines. These lines may be adjusted, moved and copied like any other NoteWriter image, and can sometimes be altered inadvertently to cover another images. They should, therefore, be used with extreme care.**



Fig. 3.26: Line Erase Procedure

It is also possible to erase rectangular or oval regions by using the Rectangle and Oval tools and setting the Erase Area radio button in the Set Line Width dialog (in the *Control* menu). With this setting, rectangles and ovals will be drawn as erasures.

Staves

A staff may be placed anywhere on a NoteWriter document by typing the command "st" and specifying the top-left position of the staff (first click) and the length (second click). Staff lines will always be drawn horizontally and the new staff will appear in the Miniature Page in the Scroll Window.

A smaller staff (height 75% of a regular staff) is available with the "!st" command. This staff can be used with the smaller clefs, grace notes and grace notes beams in a limited way for ossia or ornamentation examples. NoteWriter, however, does not include a complete set of reduced images and it is not recommended that you attempt to enter extended passages of smaller images. If you are adding images to a smaller staff you must disable the Grid since the smaller staff spaces will no longer be aligned to the Grid. It is possible to add other reduced images (i.e. rests, dynamics, etc.) as Sonata text. To do this:


- Set the Text Format to Sonata plain 24 point (use the *Text Format* item in the *Control* menu)
- Create a text box on the document by selecting the Text tool and clicking on the score.
- Type the keyboard equivalent to the desired image (use either the Key Caps desk accessory or the keyboard map included with the Sonata font package to find the correct character.)
- Make the text box as small as possible, and move the text box (with the Grid disengaged) so that the image appears in the correct position.

A staff drawn from left to right margins (i.e. a full staff) can be added with the "fst" command; this image requires only a single click at the vertical location of the top staff line. The Control Points for all staves are located at the left and right edges of the top staff line.



Fig 3.27: Staves

A staff with wider spaces (designed for use with lute or guitar tablature) can be added with the ":" command. As in the case of "fst", you need only specify the top line of the staff and it will be drawn from left to right margins.

 **Staves are assumed to go across the entire page - even if they are only partial staves. It is, therefore, possible to have notes associated with a staff that is not visible at a particular horizontal location in the score. If this causes ledger lines to be incorrectly drawn, you can either remove them with the *Remove Ledgers* menu item, or associate the notes with**

the correct staff using the *Next Staff* and *Previous Staff* menu items.

Staff Braces

Staff braces of various lengths may be drawn with the "(" command for straight braces and "{" for curly braces. The first cursor position should be the top-right corner of the top staff, and the second cursor position should be the bottom line of the bottom staff. The first Control Point is located at the same position as the staff Control Point, and the second Control Point is located at the base of the brace. Braces may be any length, may be placed anywhere on the page and may include any number of staves.

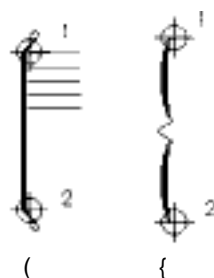


Fig. 3.28: Straight and Curly Braces

Other Double-Click Images

Arpeggio indications ("arp") are drawn by specifying the top and bottom limits of the arpeggio.

Trills ("tr") are drawn by specifying the start and end points of the trill.

Octava indications are drawn with "oct". The second cursor position determines not only the length of the broken line, but also controls the direction of the end bracket -- if you want the end bracket to turn up then the second cursor position should be higher than the first.

The command "sl" draws a slash (at 45 degrees). The first cursor position is the starting point, the second determines the height and direction of the slash. The slash will be drawn at a 45 degree angle to the height of the second cursor position. This image is intended to be used as a slash across the beams of grace note groups.

Of all the double-click images, the only one with an unusual input

method is the "<" command which is used to draw crescendo and decrescendo marks (or hairpins.) When using this command, you must specify the point of the hairpin as the first cursor position, and one of the outer edges as the second. This will mean that crescendo marks are drawn left to right and decrescendo are drawn right to left. Remember, the second "leg" of the mark will be mirrored above or below the centre point. The length and height of the crescendo may be edited later if needed.

Multiple measure rests for instrumental parts may be added with the "=" command followed by the number to be centred in the image. Specify the left and right edges of the image with the cursor.

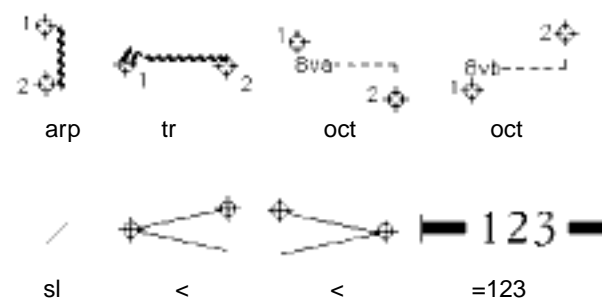


Fig. 3.29: Other Double-Click Images

Commands for Triple Click Images


There are only three music images which require three cursor positions: slurs, ties and curved lines. Slurs and ties "fatten" in the middle when they are printed, while curves are uniform in thickness. Curves are entered in exactly the same way as slurs are, but can be drawn in various thicknesses (or as dotted lines). To set the characteristics of curved lines refer to the discussion of Graphics later in this chapter.

Command	Image
slur	slur
tie	tie
cur	curved line

Slurs and Ties

The distinction between ties and slurs is that ties occur between two notes of the same pitch, while slurs may include two or more different pitches. Ties are drawn to and from the same vertical axis, whereas slurs may begin and end at different vertical locations.

The first cursor position determines the starting point of the image. In the case of the slur, the second mouse click specifies the position of the maximum height (or depth), and the third determines the end point. In the case of ties, since the height is calculated by NoteWriter and they are drawn symmetrically, the second cursor position merely indicates the direction of the tie (up or down), and the third specifies the length of the tie.

 The **Add Tie** item in the **Modify** menu can be used to draw ties between two selected notes. This is a more efficient and more accurate method of adding ties. Also, Tie direction may be flipped with the **Change Tie Direction** item in the **Modify** menu.

Slurs and curves can be drawn between any starting and ending point in a variety of ways depending on where you place the second cursor position. They are normally drawn on the screen as two arcs - from cursor position one to two, and from two to three. Because of this, slurs which arc upward should have the second cursor position higher than the first and third, and those which arc downward should have the second position lower than the first and third. If you want a

slur with only a single arc from the first point to the third point, you should place two of the clicks at one of the ends of the slur. This causes either the first or second of the arcs to be omitted. Figure 3.30 should make this clear.

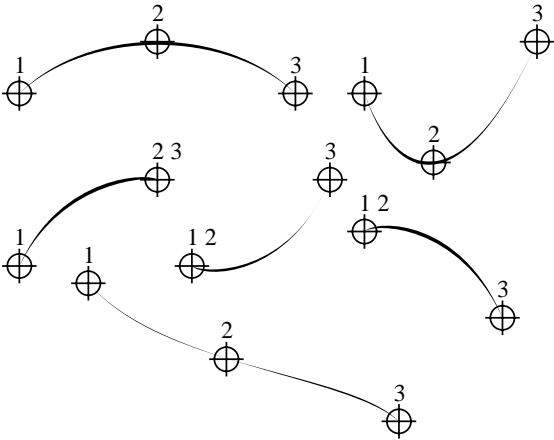


Figure 3.30: Slurs with the Locations of Mouse Clicks

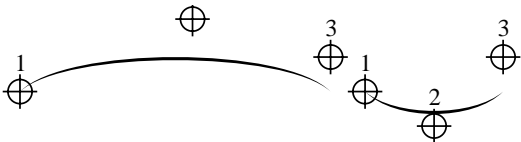


Figure 3.31: Ties with the Locations of Mouse Clicks

Control Points for slurs and ties are located at the ends and at the top or bottom of the arc. Normally, the middle point can be located quite easily during editing because the arc becomes flat at this point.

Note: Because of the difference between the methods used to draw slurs and ties on the screen (QuickDraw) and on the laser printer (PostScript), you should exaggerate the arc of slurs and ties slightly when entering them. When printed on a laser printer the shape of the arc will be slightly altered. Figure 3.32 shows the same passage printed on a dot matrix printer and on a PostScript laser printer.

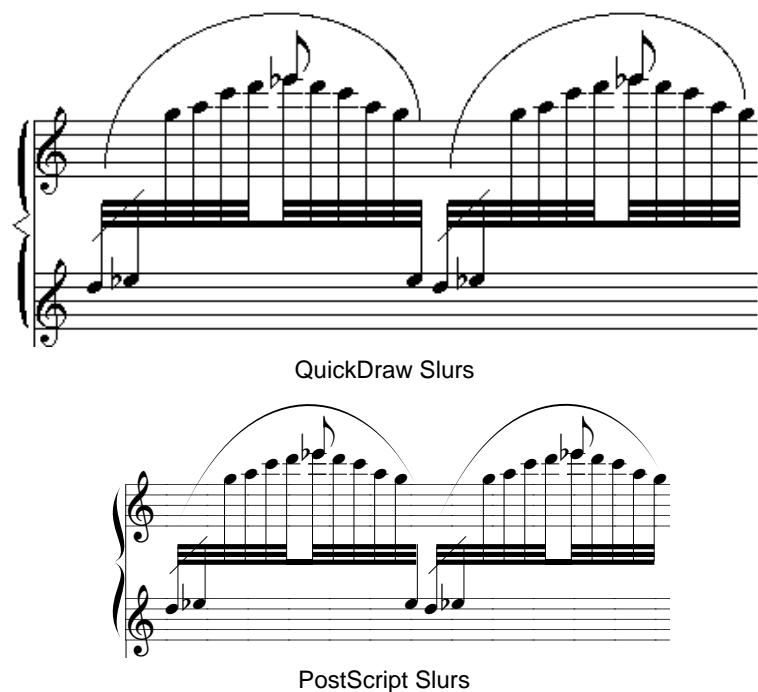


Fig. 3.32: QuickDraw and PostScript Slurs.

Text and Graphics

Text Boxes

Text is normally added in NoteWriter by placing a Macintosh text box on the screen and typing text into the box. Each text box contains text of only one font, size and style although there may be as many different text boxes in the document as memory will allow.

When the Text tool (letter A in the Command Window) is selected the cursor changes to the standard I-Beam text cursor. You may either click in an existing text box to edit the material in that box, or you may click anywhere on the screen to create a new text box. New boxes are created by clicking and dragging the mouse to create a box of any size. The size of the box can then be altered by selecting the bottom-right corner (Control Point 2) of the text box and dragging it. The position of the entire box can be altered by selecting and dragging the top-left corner of the box (Control Point 1).

Text can be imported from other programs by selecting and copying the text in another program, creating a text box in NoteWriter, and (with the cursor flashing in the Text box) selecting the *Paste* item from the NoteWriter *File* menu.

! When the Text tool is selected, all typing at the keyboard is entered into the active text box. If you forget to switch back to Insertion mode before typing the next command, the typed characters will be inserted into the last text box rather than appearing as the Current Command.

To change any characteristics of the text, select the *Text Format* item in the *Control* menu. The dialog box which appears allows justification, font size (up to 99 point) and style to be specified. Click the OK button when you are done.

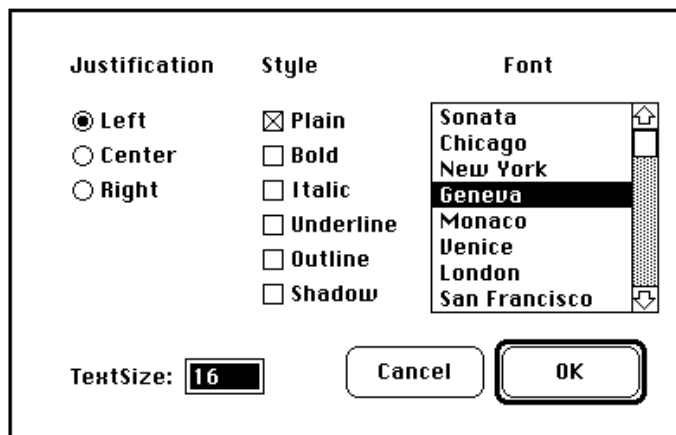


Figure 3.33: Text Format dialog box

-
- Since NoteWriter images are enlarged on the screen, and reduced to 75% when printed in High-quality mode, you should use larger text sizes than normal when setting the text format. 16 point on the screen is equivalent to 12 point on the printer.
-

When editing existing text boxes, you should treat them as any standard Macintosh text box. You may place the cursor anywhere in the box, delete and add text, or copy and paste text between text boxes using the *Cut*, *Copy* and *Paste* items from the *Edit* menu. You may perform these operations without affecting the contents of the NoteWriter buffer.

-
- Changes made in the Text format dialog box affect the text box that is currently active. A text box is active if the text-insertion cursor (a single vertical line) is blinking.
-

- Do not use *Undo* to reverse changes within text boxes. *Undo* is concerned only with NoteWriter Images and not with text within one of the images. Selecting *Undo* may cause the Text box to be removed.
-

The example below shows text boxes (in various fonts, sizes and justifications) as they appear on the screen and as they appear when printed:



Figure 3.34 NoteWriter text boxes on the screen.

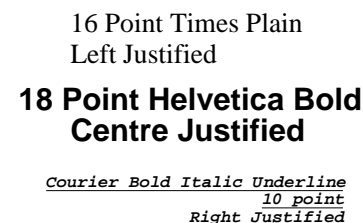


Figure 3.35: NoteWriter text boxes when printed.

Text in text boxes automatically wraps around. In addition, you can press the Return key to move to the next line.

Text that is outside the visible area of the text box will still appear when the document is printed. This means that large text fragments may be partially hidden if desired. Since documents with a large number of text boxes in various sizes may slow the speed of screen updates, a *Hide Text* item (in the *Control* menu) is available.

Using the Sonata Font in Text Boxes

If you want to add any of the Sonata font symbols at any point size, you may do this by setting the font to Sonata (with the Format dialog box), creating a text box, and typing the key that corresponds to the desired image.

This procedure is very useful for creating large time signatures, or for adding articulation marks, small notes for use as metronome indications, etc.

A keyboard map of the Sonata symbols is included with the font package. As a size reference, NoteWriter images are drawn at the

equivalent of 32 point size. The example below shows a half note entered as Sonata text (at 18 point) and additional text (of the '-'type) placed beside it.

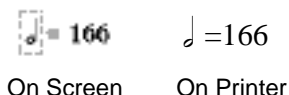


Fig. 3.36: Using the Sonata Font as Text

Graphics

The three Graphics tools: Draw-Rect, Draw-Oval and Draw-Line are used to draw rectangles, ovals and lines on the score. Unlike other NoteWriter images, graphics are drawn by clicking the mouse once and dragging the cursor until the image is the correct shape and size. The thickness of the line (or a dotted line) may be specified with the *Set Line Width* menu item. This menu sets the characteristics of rectangles, ovals, lines and curves (entered with the Command "cur" and drawn in the same manner as slurs).

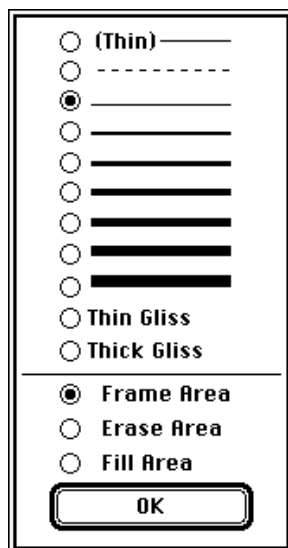


Fig. 3.37 Set Line Width dialog

When using the *Thin Gliss* and *Thick Gliss* line settings, the lines will appear on screen as solid lines, but will appear as wavy lines when printed on a PostScript laser printer.

When the shift key is depressed, lines are constrained to straight horizontal or vertical lines, rectangles to squares, and ovals to circles. Ovals and rectangles can be set to Frame Area (with various line widths), to Fill Area (which fills the graphic image with black) or to Erase Area (which fills the graphic image with white).

Although dotted lines may sometimes appear distorted on the screen, they will be drawn correctly when printed on a PostScript laser printer.

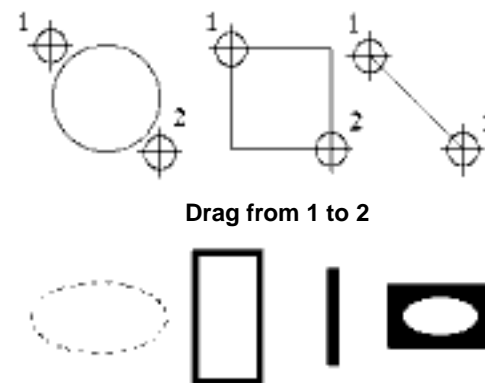


Fig. 3.38: Graphic Images in NoteWriter

Importing Graphics

Graphics from other programs (in PICT format) can be included in NoteWriter documents. These images may be imported (copied and pasted) from any Macintosh graphics program. PICT images are displayed with dotted lines around them. As in the case of text boxes, you can re-position the images by selecting the top-left corner of the rectangle and dragging the image to a new location. (The rectangle is moved without the image until the mouse button is released.) You can resize PICT images by dragging the bottom-right corner and stretching or compressing the picture.

The procedure for importing graphics is as follows:

- Create the picture in any standard Macintosh graphics program (or on another computer that is capable of saving in PICT format.)
- Copy the picture and paste it into the Scrapbook.

- In NoteWriter, open the Scrapbook and copy the image by selecting *Copy* from the *Edit* menu.
 - Close the Scrapbook and choose *Paste* from the *File* menu.
 - Drag the PICT (which initially appears as a rectangular region) into place.
-

Symbol Library

Symbol Libraries contain collections of NoteWriter images (including PICT and text images.) The Symbol Library normally appears down the left side of the screen although the window may be enlarged or moved elsewhere. The library is divided into numbered segments (usually 50) with each segment containing a single image or collection of NoteWriter images. (Any amount of material can be placed in each segment of the Library - although only a small portion may be visible in the library window.)

The operation of the Symbol Library is controlled from the *Library* menu:

New Library - creates a new, blank Library, initially set with 50 segments. (When you paste into the last segment of the Library, five more segments are added.)

Open Library... - brings up a dialog box with the existing libraries on the available disks. Select the Library you want to open.

Save Library... - saves the current Library to disk.

Save Library As... - save the current Library under a new name.

Clicking the go-away box in the Library window hides the Library but does not close the Library file. To make the Library visible again, select *Symbol Library* from the *Windows* menu.

Copying and Pasting with the Symbol Library

To copy the contents of a Symbol Library segment to use in your score, select the segment you wish to copy by clicking the mouse in the segment. Choose *Copy* from the *Edit* menu (or use ⌘-C). Select the *Paste* item from the *Edit* menu (or use ⌘-V) to insert the contents of the segment into your score. You may also use the *Cut* item from the *Edit* menu (⌘-X) to remove the contents of the Library segment.

To paste a collection of NoteWriter images into the Library, select the images you want to copy (with the Select-Rect or Select-Region tools) and choose the *Copy* item from the *Edit* menu. Then click on the segment of the Library you want to store the images in and choose

Paste from the *Edit* menu. If you paste into a segment that already contains an image, the old image will be replaced by the new one.

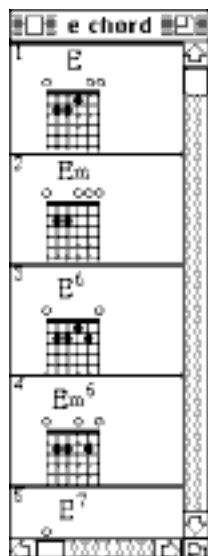


Fig. 3.39: Symbol Library

Chapter 4 - Editing

This chapter deals with the NoteWriter editing routines. Normally, the user will switch freely between inserting images and editing the score. Modifications to the score may be made at any time.

Editing in NoteWriter: An Overview

NoteWriter was designed with a highly interactive and intuitive user-interface. Entering images is done by specifying the essential drawing positions with the mouse, and editing is done by selecting portions of the score and performing editing procedures on the selected material.

Most modifications to the score are done by dragging images (or portions of images) with the mouse. As the music is altered, the changes are displayed on the screen you are always able to view the current state of your score.

Although editing does not require a knowledge of the underlying structure of NoteWriter, it is useful, especially for complex editing situations, to understand how editing is accomplished by the program. It should already be clear that all images in NoteWriter have Control Points associated with them, and that for most images these Points are the cursor positions used to place the image on the screen. When you select images, you are gathering their Control Points, and when you perform an editing operation, you are adjusting the Control Points, causing the appearance of images to be altered.

Selecting Images

As with most Macintosh applications, you must first select the material you wish to edit, then call the editing procedure. To select material in NoteWriter, you can use either the Select-Rect or Select-Region tools. Click the box in the Command Window top make one of these tools active.

With the Select-Rect tool, you should position the cursor above and to the left of the image or group of images to be selected, then hold the mouse button down and drag the mouse. As you move the cursor, an inverted rectangle appears. When you have enclosed the images or portions of images you want altered, release the mouse button. The Select-Rect tool is a more efficient tool for selecting

portions of the score and should be used for normal editing. If you are using the Select-Rect tool, the document will scroll automatically if you push the cursor to edge of the window.



Fig. 4.1: Selecting with the Select-Rect tool

 **The Return key can be used to switch between Insertion and Select-Rect modes.**

With the Select-Region tool, hold the mouse button down and move the cursor so that you encircle the image or images you want selected. As you move the mouse, a line appears, and when you release the mouse button, the region you have outlined becomes inverted. The Select-Region tool is useful for selecting some images while excluding other images (whose Control Points are in the same rectangular area of the score.) With the Select-Region tool, you can precisely control which images are selected.



Fig. 4.2: Selecting with the Select-Region tool


When there is no selected area on the screen, the last image entered is considered to be selected, so you can perform any editing operations on an image immediately after entering it without having to change tools and select it.

Adjusting Images

Slight horizontal adjustments can be made to the position of images with the right and left arrow keys on the keyboard. The procedure operates upon currently selected images, or upon the last image added to the page if there is no selection. The distance of the adjustment is 2 pixels, and the procedure can be used repeatedly to move the images across the page. The main purpose of this editing


routine is to quickly adjust images in order to avoid collisions between notes and accidentals.


The horizontal position of accidentals can be adjusted to avoid collisions between accidentals in chords. Select the note or notes whose accidentals you wish to modify and depress the left or right arrow keys while holding down the Shift key. The left arrow causes the accidental to shift to the left and the right arrow causes them to shift to the right. The arrow keys can be depressed repeatedly until the accidentals are in position. You can also alter the position of accidentals by choosing *Shift Accidental Left* or *Shift Accidental Right* from the *Note Modifiers* sub-menu of the *Modify* menu.

 Only accidentals that were entered as part of the note (with compound commands such as "qsh" or with the *Modify* menu items) can be re-positioned in this manner. If accidentals were added as separate images, they can simply be dragged to a new position.

Selection and Control Points

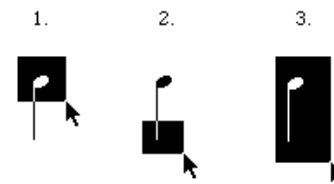
Some editing routines (specifically Adjust and Stretch-Compress) operate on all Control Points selected, while others affect only images whose primary Control Point (i.e. first Control Point) is selected. For the sake of consistency, it is recommended that you enter horizontal and vertical images (i.e. beams and lines) from left to right or top to bottom. If you follow this guideline, you can assume that the top or left edge of the image is the primary Control Point, and when using editing routines which require only the first Control Point to be selected, you can simply the process by selecting a small area around the primary Control Point rather than selecting the entire image.

 You may display Control Points on the screen temporarily with the *Show Control Points* item in the *Control* menu. Primary Control Points are drawn in white, others in light gray.

 As a short cut, when selecting a single Control Point, you can simply click on the point without dragging the mouse. A small rectangle is drawn around the cursor, and the underlying Control Point will be selected.

Since NoteWriter has been designed to work intuitively, you should not be too concerned with the positions of Control Points. When you select the images or portions of images you want to modify, the

appropriate Control Points will be selected. It is only when images are in very close proximity that you may want to display the Control Points before selecting the image. Figure 4.3 shows a number of selections on a single note with an indication of what editing procedure might subsequently be performed.



1. Selecting the note head -- for changing the pitch or the horizontal placement of the note
2. Selecting the note stem -- for changing the length or direction of the stem
3. Selecting the entire note -- for moving the note or copying into the buffer.

Fig. 4.3: Selecting Portions of an Image.

In the next example, groups of images are being selected and edited. Notice that any collection of Control Points regardless of what image they belong to can be edited simultaneously.

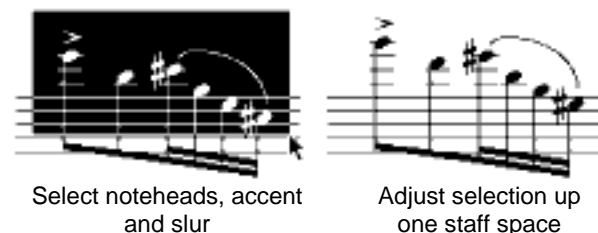


Fig. 4.4: Selecting Groups of Images.

Shift-Selecting

If you hold the Shift key down while using the Select-Rect tool, you can make multiple selections of non-contiguous images. When you make a new selection with the Shift key held down, the previous rectangle changes from being highlighted to a framed rectangle, and the new area is highlighted. All Control Points in all of the rectangles drawn are selected and ready to be operated upon. However, only the last rectangle is active, so operations which require that the cursor to be placed in the selected area will only work when you place

the cursor in the last rectangle drawn. This procedure is particularly useful for modifying notes. For example, you can Shift-select all the B pitches on the page and choose the *Add Flat* menu item to change all the notes to Bb.

After an editing operation, all areas remain selected for further editing. They automatically become un-selected when you change tools, or enter a new command in the Command Line.

The Edit Menu

Edit	
Undo	⌘Z
Cut	⌘H
Copy	⌘C
Paste	⌘V
Clear	
Move	
Adjust	
Stretch-Compress	⌘K
Justify	⌘/
Select To Right Edge	⌘7
Select To Bottom Edge	⌘8
Remove Last Image	⌘9
Reinstate Last Image	⌘0
Set Edit Filter...	
Clear Edit Filter	

Fig. 4.5 The Edit Menu

Undo


The Undo routine is an extremely useful procedure and should be used to repair any mistakes made during insertion or editing. The last change to the document is un-done, and the screen is redrawn in its previous state.

To call Undo, you may either select *Undo* from the *Edit* menu or use the ⌘-Z keyboard short-cut. You are strongly urged to use this routine frequently -- it is a clean and efficient way of fixing errors. In many cases it is faster to Undo an incorrectly placed image and redraw it, than to move the image to its correct location.

Copy

In accordance with Macintosh editing conventions, you must first select the material you want copied (with the Select-Rect or Select-Regions tools), then perform the operation.

To copy a selected area or region, choose the *Copy* item in the *Edit*

menu or use the -C short-cut. All images whose primary Control Point has been selected are copied into the NoteWriter buffer. These images may be pasted elsewhere in the score, into another NoteWriter document, or into the Symbol Library. At present, it is not possible to transfer NoteWriter data directly to other applications - to do this you must save the document either in Paint or PostScript format.

It is important to remember that NoteWriter does not collect all the images that are partially enclosed in the selected area, only those whose primary Control Point has been selected. In the following example, the four notes, the beam, the slur and the second tie have been copied. The staff, the first note, the last note and the first tie are not included in the copy.

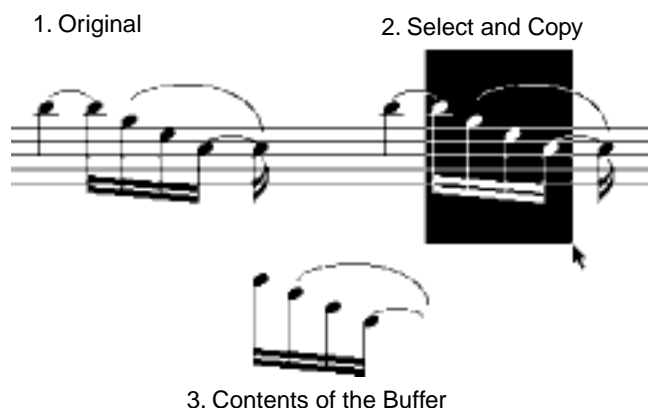



Fig. 4.6: The Copy Procedure

Cut

A Cut is performed either by choosing *Cut* from the *Edit* menu or by typing the -X short-cut. All images whose primary control point is within the selected area are loaded into the NoteWriter buffer and are removed from the screen. Any image (including a staff or a text box) may be removed from the document. Removing a staff does **not** remove the notes that were on the staff unless they also were selected. An incorrect Cut can be reversed with Undo.

Delete

Selecting a area of the score and pressing the Backspace (or delete)

key removes all images whose primary Control Point has been selected. Unlike Cut, the images are not loaded into the buffer. An incorrect Delete can be reversed with Undo.

Erase

In addition to Delete, you may erase images by selecting the Eraser tool from the Command Window, placing the cursor (which becomes a white square) on the first Control Point of an image and pressing the mouse button. While the mouse button is down, all images whose primary Control Point is under the cursor will be removed from the document. You may reverse the Erase with the Undo command. Delete and Erase essentially perform the same task, but their method of operation is different.

Paste

When the *Paste* menu item (or -V) is chosen, the contents of the buffer appear in an inverted rectangle on the screen.

You should place the cursor in the inverted rectangular area and drag the images to the desired location. If you reach the edge of the window while dragging, the document will automatically scroll.

When images are dragged during the Paste procedure, they are drawn without ledger lines. When the mouse button is released, ledger lines are drawn from each note to its closest staff. If a note becomes associated with the wrong staff, you can correct the error by selecting the note and choosing the *Next Staff* or *Previous Staff* menu items.

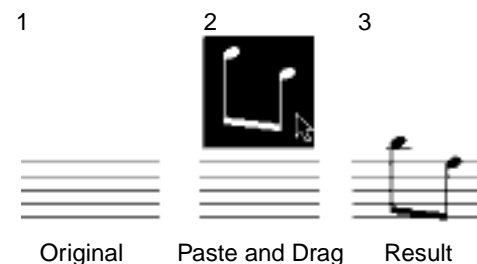


Fig. 4.7: The Paste procedure.

Adjust

The Adjust editing procedure is the most powerful and useful of all. This routine allows you to modify the position of an image easily and precisely.


Although there is an *Adjust* item in the *Edit* menu, the normal method of invoking the procedure is to select an area (or region) of the document, and simply place the mouse in the selected area and hold down the mouse button. As you drag the mouse, all collected Control Points will be adjusted correspondingly. Since Adjust operates on all the Control Points selected, the routine can be used to alter any image in any reasonable way.

For example, if you select a note head and adjust it, you will cause the pitch to change, but the stem will still be drawn to its original vertical location - you have not altered this Control Point. Likewise, if the end of the stem is selected, the height or direction of the stem can be altered without changing the pitch. If you select the second Control Point of a slur, the arc and direction of the slur can be altered without affecting the start and end points. Of course, it is also possible to collect all Control Points of an image (or many images) and cause entire objects or groups of objects to be moved. If you drag images past the edge of the window, the document will automatically scroll.

After an Adjust, the images can be returned to their original position by selecting *Undo* from the *Edit* menu.




Fig. 4.8: Adjusting Images

 **The direction of adjustment can be constrained to the horizontal or vertical axes if the Shift key is held down when the mouse button is placed in the selected area.**

Move

Move is very similar to Adjust except that the position of entire images rather than portions of images are altered.

You may use the *Move* menu item in the *Edit* menu, or you may simply select an area, place the cursor in the area, and depress the cursor button with the Option key held down. As you drag the mouse, the all images whose primary Control Point has been selected will be moved with the cursor. As in the case of Adjust, the Shift key constrains the drag to horizontal or vertical axes. Images altered with this procedure are moved without changing their relative coordinates in other words, the object or objects are moved as a block. You can return the images to their original position with the *Undo* menu item.

 **Although Adjust (with all Control Points selected) can be used to Move images, you will get more reliable results if you use the Move procedure when you are relocating a block of images.**

The example below (Figure 4.9) shows the distinction between Adjust and Move. The same area (enclosing a single note and the right edge of a beam) is selected in both cases. Notice that Adjust allows the note to be moved and the beam to be stretched, while Move causes the note to moved without the modifying the beam (since only its second Control Point was selected). In fact, the Move could have been done with only the note head selected.

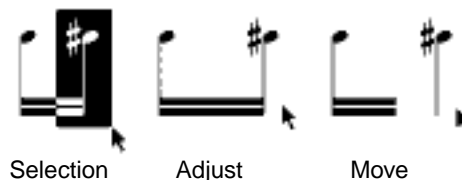



Fig. 4.9: Distinction between Adjust and Move

Stretch / Compress

This procedure causes the images within a selected area to be adjusted proportionally. This routine is very useful for adjusting the score so that the music is aligned at the right margin. The procedure is analogous to full justification in a text editor. It allows you to alter the spaces between images without altering the shape or size of the images themselves. To perform a stretch or compress, select the material to be adjusted, then choose *Stretch-Compress* ( - K) from the *Edit* menu, then place the cursor in the selected region (towards the right edge of the selection). As you drag the mouse, the images will be adjusted horizontally according to their proportional position within the selected area. Conceptually, you should consider the

cursor position to be the new right edge of the selected area: as you drag to the right, the selected images will become further apart, and as you drag to the left, the images become closer together. Vertical movement of the mouse is ignored. When the Grid is on, all stretching and compressing is aligned to the Grid. The following example demonstrates how a group of notes can be stretched so that they fill the entire measure.

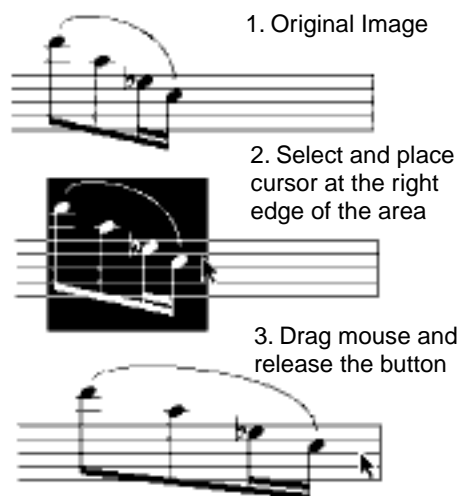



Fig. 4.10: Stretching a passage.

 If accidentals and dots were added as separate images, they will be stretched and compressed away from their associated notes. If they were entered as part of the note (with compound commands such as "qsh" or with the *Modify* menu items) they will remain in the correct position relative to the note.

Justify

As an extension to the Stretch / Compress operation in NoteWriter, there is a *Justify* menu item (in the *Edit* menu) which can be used to stretch or compress a line or system of music so that the last barline is aligned with the right edge of the staff. To justify a line (or system) of music, follow the procedure outlined below:


- 1 Enter a line or system of music WITH the final barline (which may be before or beyond the right side of the staff).
- 2 Set *Select to Right Edge* using the menu item in the *Edit* menu and select all the notes on the staff or system (drag the cursor on the

left of the first note on the staff).

- 3 Select the *Justify* item in the *Edit* menu. The right-most barline will be aligned to the end of the staff, and all other images adjusted proportionally. If a barline (or double-barline) is not the right-most image, the last image is placed a short distance to the left of the end of the staff.

Making Large Selections

The Edit menu has two items which alter the operation of the Select-Rect tool. If you set the *Select to Right Edge* feature (by choosing it in the menu), the Select-Rect tool will automatically enclose the area from the cursor position to the right edge of the page. This feature is extremely useful for selecting entire lines of music in order to extract parts from a score. Likewise, setting the *Select to Bottom Edge* feature will cause the selection rectangle to be drawn from the cursor to the bottom of the page. You should turn these features off (by selecting the menu item again) when you are finished using them.

 When there is no selected area on the screen, the last image entered is considered to be selected. You can then perform editing operations after entering an image without having to select it.

This feature also works for copy and cut, so that an image may be placed on the screen and immediately copied.

 If you set both the *Select To Right Edge* and *Select to Bottom Edge* features, you can select the entire score by simply clicking in the top-left corner of the document.

Remove Last Image and Reinstate Last Image

Selecting the *Remove Last Image* item from the *Edit* menu removes the last image in the data structure. Unlike Undo, you may continue calling this routine and remove additional images from the document. *Reinstate Last Image* is the complementary routine -- it sequentially restores the removed images. These routines can be used to eliminate or restore the most recent additions to the score. For example, if you add an image, then select Undo, you can undo the undo by selecting Reinstate Last Image.

! The Remove Last Image procedure cannot remove Text boxes - they must be erased or deleted.

Set / Clear Edit Filter

An Edit Filter is provided for instances (such as transposition) where certain images (e.g. barlines and rests) should be left where they are, while other images (e.g. notes, beams, slurs etc.) are moved. Selecting the *Set Edit Filter* item causes a dialog box to appear with a series of image types listed (e.g.rests, barlines etc.). Setting these items causes the associated images to be omitted from cut and copy selections.The *Clear Edit Filter* item clears the current filter settings.



Fig. 4.11: Edit Filter

The Modify Menu

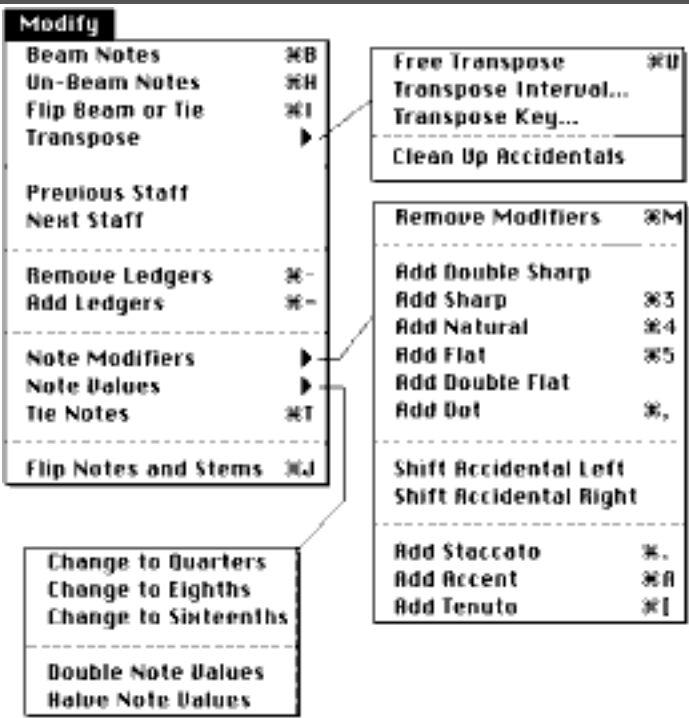


Fig. 4.12: Modify Menu and Submenus


Modifying Images

In addition to the routines outlined above, there are a number of items in the *Modify* menu which can be used to alter the characteristics of images or collections of images. Like the Edit procedures, you must first select the material to be modified before calling the routine. All images whose primary Control Point is selected will be modified.


Beam Notes

The *Beam Notes* menu item in the *Modify* menu allows for automatic beaming of selected notes. The procedure (invoked by choosing the menu item or Control-B) causes all selected flagged notes (8th, 16th, 32nd and 64th notes) to be altered to a beamed group. The routine is capable of joining up to 32 notes in a group. The main beam is drawn from the end of the flag on the first note to the end of the flag on the

last note, with all intermediary beams being calculated accordingly. This routine can be a tremendous time-saver when used in conjunction with the on-screen keyboard and Vertical-Alignment Bar since it allows you to enter notes with flags, and form them into beamed groups later.

 **Remember that the main beam is drawn from the tip of the flag of the first note to the tip of the flag of the last note in the selected group. You should normally ensure that the positions of the flags are appropriate before beaming the group - the stems of the outside notes will not be adjusted.**

It is also possible to have beams automated added while you are entering notes. Refer to the section on Auto-beaming in Chapter 7 for more details.

The *UnBeam Notes* menu item (-H) in the *Modify* menu changes notes which have previously been beamed with the *Beam Notes* menu item into flagged notes. Both the notes and the beams should be included in the selection - if the beam is not included, it will remain on the screen even though the notes are altered.

Flip Beam or Tie

For Beams:

This procedure (in located in the *Modify* menu) allows you to reverse beams that have been drawn in the wrong vertical direction by default. The position of the beam is not altered, merely the side of the beam on which secondary beams are drawn (i.e. above or below the main beam). It is possible with complex beams (i.e. beams which are constructed with multiple segments) to change the direction of some of the beam segments and not others. In the example below, all beams were originally drawn in an upward direction. The middle beam segment (the second group of sixteenth beams) was selected and the direction changed.




Fig. 4.13: Flipping the Direction of a Secondary Beam.

For Ties:


This feature is intended to be used in conjunction with the *Tie Notes* menu item to reverse the drawing direction of ties. Select the left edge of the tie (i.e. the primary Control Point), then choose this menu item. A downward tie will flip to the other side of the note and be drawn in an upward direction, and vice versa. This procedure may also be used with slurs, although the position of the altered slur may still require some adjustment.


Transpose

A number of transposition features are present in NoteWriter: Free Transpose, Interval Transpose and Key Transpose.

 **Transposition will only work properly when accidentals are associated with notes. If you have added accidentals as separate images the notes they refer to will be treated as if the accidental is not present.**

Free Transposition

To perform a transposition (by interval) on a portion of your score, select the material to be altered, choose the *Free Transposition* menu item (-U), place the mouse in the selected area and drag the mouse up and down. As the mouse is dragged, the notes will be altered to different transposition intervals. Release the mouse button once the desired pitch level has been reached. Staves, barlines, rests, dynamic markings, etc. will be unaffected by the transposition. Slurs, ties, beams and articulation marks will be adjusted with the notes.

 **Notes are adjusted to include all normal pitches. Therefore, many semitones have two enharmonic equivalents. The note C when ascending will appear as:**
C - C# - Db - D - D# - E - F - F# - Gb - G - G# - Ab - A - A# - Bb - B

Transpose Interval

To transpose a passage by a specific interval, select the material to be transposed and choose the *Transpose Interval...* menu item. A dialog box allows you to set the transposition interval and direction.

Transpose Interval: ☒ Up ☐ Down

<input type="radio"/> aug unison (C - C#)	<input type="radio"/> perfect 5th (C - G)
<input type="radio"/> dim 2nd (C - Dbb)	<input type="radio"/> aug 5th (C - G#)
<input type="radio"/> minor 2nd (C - Db)	<input type="radio"/> dim 6th (C - Abb)
<input checked="" type="radio"/> major 2nd (C - D)	<input type="radio"/> minor 6th (C - Ab)
<input type="radio"/> aug 2nd (C - D#)	<input type="radio"/> major 6th (C - A)
<input type="radio"/> dim 3rd (C - Ebb)	<input type="radio"/> aug 6th (C - A#)
<input type="radio"/> minor 3rd (C - Eb)	<input type="radio"/> dim 7th (C - Bbb)
<input type="radio"/> major 3rd (C - E)	<input type="radio"/> minor 7th (C - Bb)
<input type="radio"/> aug 3rd (C - E#)	<input type="radio"/> major 7th (C - B)
<input type="radio"/> dim 4th (C - Fb)	<input type="radio"/> aug 7th (C - B#)
<input type="radio"/> perfect 4th (C - F)	<input type="radio"/> dim 8ve (C - Cb)
<input type="radio"/> aug 4th (C - F#)	<input type="radio"/> perfect 8ve (C - C)
<input type="radio"/> dim 5th (C - Gb)	

OK

Fig. 4.14: Transpose Interval Dialog

Transpose Key

To transpose a passage from one key to another, select the *Transpose Key...* menu item. A dialog box appears which allows you to set the original key, the destination key and the direction of transposition. The selected notes will be transposed to the new key.

From Key of: ☒ Up ☐ Down To Key of:

<input checked="" type="radio"/> C major / A minor	<input checked="" type="radio"/> C major / A minor
<input type="radio"/> G major / E minor	<input type="radio"/> G major / E minor
<input type="radio"/> D major / B minor	<input type="radio"/> D major / B minor
<input type="radio"/> A major / F# minor	<input type="radio"/> A major / F# minor
<input type="radio"/> E major / C# minor	<input type="radio"/> E major / C# minor
<input type="radio"/> B major / G# minor	<input type="radio"/> B major / G# minor
<input type="radio"/> F# major / D# minor	<input type="radio"/> F# major / D# minor
<input type="radio"/> Db major / Bb minor	<input type="radio"/> Db major / Bb minor
<input type="radio"/> Ab major / F minor	<input type="radio"/> Ab major / F minor
<input type="radio"/> Eb major / C minor	<input type="radio"/> Eb major / C minor
<input type="radio"/> Bb major / G minor	<input type="radio"/> Bb major / G minor
<input type="radio"/> F major / D minor	<input type="radio"/> F major / D minor

OK

Fig. 4.15: Transpose Interval Dialog

This procedure does not change the key signatures. This must be done by deleting the old key signature and entering a new one -- using the key signature commands (eg. ks2) or the global key signature command (eg. &ks2).

! Since all transposition is done relative to the clefs, clef changes from the original page setup may result in incorrect transposition. When no clef has been entered on a staff, a treble clef is assumed.

Clean Up Accidentals

Since NoteWriter scores are not organized into measures, there is no simple way of avoiding repeated accidentals within measures. When transpositions are performed, there may be repeated accidentals or missing naturals. The *Clean Up Accidentals* menu item is designed to eliminate these errors and redundancies. Select the area to be altered (usually one measure - including multiple staves) and choose the *Clean Up Accidentals* item. Repeated accidentals will be removed, and any required naturals will be added. If you prefer, you may manually correct the errors using the *Add Accidentals* and *Remove Modifiers* menu items.

Previous Staff and Next Staff

These menu items cause the selected notes to be associated with the closest staff above or below the staff to which they are currently associated.

If ledger lines appear connecting the note to a staff other than the one you intended, use these items to change the staff association and thereby remove the ledger lines. Incorrect association may occur during editing (e.g. if you move a note from one staff to another rather than cutting and pasting.)

! Since staves are considered to extend across the entire width of the document, you may find that staff associations become confused if you have two short staves at approximately the same vertical location. Adjusting the staff position so that it is directly in line with the other staff should resolve the confusion. Alternatively, you may use the *Previous Staff* and *Next Staff* items to associate the notes with the correct staff.

Remove Ledgers and Add Ledgers

These items, as their names suggest, remove or add ledger lines by either canceling any staff association or creating an association with the closest staff. To stop ledger lines from being added automatically, disengage the Defaults.

Remove Modifiers

The *Remove Modifiers* (M) item in the *Note Modifiers* submenu eliminates accidentals and dots (i.e. modifiers) from all selected notes.

Add Accidentals

The *Note Modifiers* submenu includes items for adding accidentals (double sharps, sharps, naturals, flats and double flats) to selected notes and for adding a dot to selected notes or rests. Accidentals appear in a fixed position to the left of the notes. If this position causes a collision with another accidental, then you may move the accidental with the Shift-Left arrow or Shift-Right arrow keys or choose the *Shift Accidental Left* or *Shift Accidental Right* menu items.

In some cases, it may be faster to enter notes without accidentals, then to move through the score Shift-Selecting all the notes which

require a certain accidental, then choosing the appropriate menu item.



Fig. 4.16: The Effect of Add Dot.

Add Articulations

The *Note Modifiers* submenu includes items for adding staccato dots, accents or tenuto marks to selected notes. The articulation marks are placed at a set distance above noteheads whose stems or flags are down and below noteheads whose stems or flags are up. If desired, you can add both staccato dots and accents or staccato dots and tenuto marks to the same notes. Added articulations are considered as separate images, so they can be freely moved, removed and edited.

Change Note Values


The *Note Values* submenu contains menu items (*Change to Quarters*, *Change to Eighths* and *Change to Sixteenths*) that allow you to change the durations of selected notes respectively to quarter notes, eighth notes and sixteenth notes. The *Double Note Values* item changes the note values of selected notes so that they are twice their original duration. The *Halve Note Values* item changes note values so that they are half their original duration. Although the appearance of notes may change, none of these menu items alter the position of the notes.

! This feature will only work properly on notes that have not been formed into beams since notes that have been beamed are considered to be quarter notes.

Tie Notes


This procedure was added to automatically tie notes together. Select the two notes to be tied, then choose the *Tie Notes* menu item (T). If you have selected more than two notes, only the first two notes will be tied. The direction of the tie is determined by the stem direction of the first note. If the tie is drawn in the wrong direction (i.e. when there

are multiple voices on the staff), you may reverse the direction by selecting the tie and choosing the *Flip Beam or Tie* menu item (⌘-I). Also, ties may be adjusted or moved using the normal editing procedures. Remember, ties are drawn to and from the same vertical location -- they cannot be used to join notes of different pitch. If you adjust the first or third Control Point of a tie the other will be adjusted with it.

 **This feature may only be used to generate ties between notes. To draw ties at the ends or beginnings of lines, use the normal tie command.**

Flip Notes

This menu item (⌘-J) causes a group of selected notes and beams to be flipped so that the beams and stems are drawn on the opposite side of the note heads. In effect, the stems are flipped, the beam is shifted, and the drawing direction of the beam is reversed. This routine may not work correctly with excessively long stems or unusual melodic contours. All images may, of course, be altered using the normal editing procedures.

 **If the beam becomes separated from the notes when you perform this routine, it means that beam was initially drawn in the wrong direction (in the case of single beams, this is not apparent on the screen.) You should first reverse the direction of the beam (Change Beam Direction menu item) then call the Flip Beams and Stems routine.**

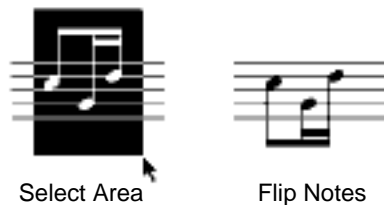


Fig. 4.17: Flip Beams and Stems

The Extension Menu

An Extension menu (named *Ext.*) was added to NoteWriter so that simple, but useful editing procedures could be added to the program as they were developed, and so that individuals could customize their version of NoteWriter with additional editing routines.

A number of these routines have been added (thanks to George Kan for writing most of them):

Remove Dot - removes only the dot from selected notes and rests.

Remove Accidental - removes only the accidental from selected notes. (The *Remove Modifiers* menu item removes both accidentals and dots.)

Remove Stems - removes the stems from notes.

Remove Heads - removes the notehead leaving only the stem.

Change Note->diamond - change a regular notehead to a diamond notehead. This is useful for string harmonics.

Change Tie->dotted - change a tie or slur to a dotted curve.

Change Note->small - change selected regular-sized notes to grace notes.

Align horizontal - align images horizontally (to the first image in the selection.)

Tie Middle Up - adjusts the arc of the tie so it is higher. In fact, the tie is transformed into a slur and the middle point is adjusted.

Tie Middle Down - adjusts the arc of the tie so it is lower. As above, the tie is changed into a slur and the middle point is adjusted.

Move 1Pix->right - move images 1 pixel to the right.

Move 1Pix->left - move images 1 pixel to the left.

Move 1Pix->down - move images 1 pixel down.

Move 1Pix->up - move images 1 pixel up.



The above 4 items allow you to adjust the position of images without disabling the Grid.

Line Width... - brings up a dialog box which allows the width of lines and other graphics (rectangles, ovals, curves) to be altered.

Text... - allows the characters in single-quote text to be altered. (Up to 8 characters are allowed in single-quote text.)

Text Size... - allows the size of single-quote text to be altered.

Time Signature - allows selected time signatures to be altered.

Change Object - allows the ID number of a selected image (or group of images) to be altered. *This should only be done by expert users!*

Cresc.<->Dim. - alters the direction of selected crescendi and diminuendi.

Users who are familiar with C programming and would like to create their own editing extensions should contact the author for the necessary code.

Chapter 5 - Printing

Printing Modes

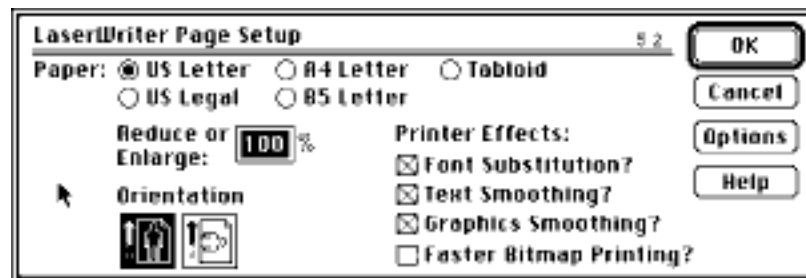
NoteWriter supports two printing modes: Draft mode is designed for dot matrix printers, ink-jet printers and non-PostScript laser printers. Laser mode is designed for PostScript laser printers and phototypesetters. To print in Draft mode, select the *Draft-quality Print...* item from the *File* menu. To print in laser mode, select the *Laser Print...* menu item (⌘-P) from the *File* menu.

The main distinction between the two printing methods is that Draft mode sends the images on the screen to the printer as QuickDraw calls, while Laser mode converts the images on the screen into PostScript code and sends this code to the printer. The PostScript printer then interprets the code and draws the music images using the Sonata font and high resolution methods for beams, slurs, and other variable length images. The output of Laser mode (PostScript) printing is far superior to Draft mode printing. However, because of the difference between the two printing modes, the screen will be faithfully reproduced with Draft printing, but is approximated (as closely as possible) with Laser printing. You will notice some slight discrepancies between what appears on the screen and what appears on your PostScript laser printer. For the most part, the discrepancies result from the differences between the NoteWriter images (on the screen) and the Sonata images (on the printer) as well as from the different methods (PostScript versus QuickDraw) used to draw variable length images (e.g. slurs, ties, piano braces.) If you are working with very detailed and precise placement of images, you may be required to make slight adjustments to the screen images so that they appear exactly the way you want them on your PostScript printer.

Another important distinction between the two printing modes is that Draft printing sends the enlarged images to the printer, whereas Laser printing sends the images at normal scale (24 point). The best way to conceptualize this is to consider the screen to be slightly magnified - notice that the NoteWriter rulers (choose the *Ruler On* menu item) are also enlarged. When you print in Laser mode, the images are automatically reduced to normal size, but when you print in Draft mode they remain enlarged, unless you choose the *Draft Print @ 75%* selection from the *File* menu.

Page SetUp

Choosing *Page Setup* from the *File* menu shows the standard Macintosh dialogs for the currently selected printer. A dialog box appears which allows the paper size, the orientation and other special effects to be specified.




5.1: LaserWriter Page Setup dialog.

Once a Page Setup has been set, you should see the print area margins on the screen - a gray rectangle on the main screen shows the current print area and will reflect all the setting of the Page Setup dialog. This gray rectangle can be turned off with the *Hide Print Area* menu item in the *Control* menu .

To view a miniature display of the entire page choose *Show Overview* (⌘-F) from the *Windows* menu. The print area (as set by the Page Setup dialog) is highlighted and can be moved to any desired location by dragging it. This allows you to change to portion of the score that will appear on the printed page.

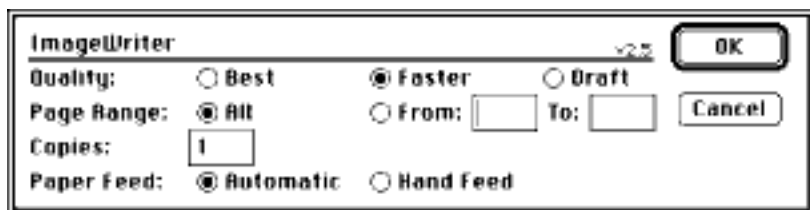


Fig. 5.2: Overview of the Page

 **Page Setup** information is saved with the NoteWriter file. If you move your document to another computer or try to print on a different printer, you should choose **Page Setup** before trying to print the document.

Draft Printing

To print a Draft-quality copy of your document, select *Draft-quality Print* from the *File* menu. A dialog box controls the printing job. If you are printing on an Apple ImageWriter it is recommended that you use the *Faster* rather than the *Best* quality setting in this dialog box. Best quality prints lines darker than bitmaps, and the output will not be consistent.



5.3: ImageWriter Print Job Dialog Box

Draft mode was primarily designed for proofing scores on dot-matrix

or ink-jet printers, although it may be used for final copy if a PostScript laser printer is unavailable. In order to produce a reasonably high quality output on dot matrix printers, the images are sent to the printer at the size they appear on the screen. The printed score can later be reduced to a smaller size (e.g. to 75%) with a photocopier to produces a much more acceptable resolution than printing at the smaller size. However, because an enlarged version of the score is sent to the printer, you may not get the entire document on a single page. Alternatively, you can choose *Draft Print @ 75%* from the *File* menu to reduce the score so that it fits on a single page. The chart below shows the actual printing area on the page, and the effective size of the NoteWriter document that is printed in this area.

Paper	Actual Size	Document Size
Letter	8" X 10"	6.75" X 7.75"
Legal	8" X 14"	6" X 10"
Computer	10" X 14"	7.75" X 10"

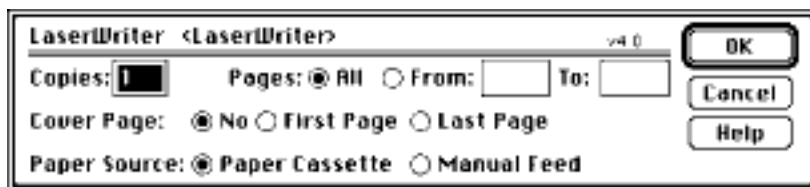
Most dot-matrix and ink-jet printers permit a variety of reduction and enlargement percentages, so you may want to experiment with different percentages (with and without the *Draft Print @ 75%* item checked) in order to get the desired print-out size on the paper.

Laser Printing

To print on a PostScript printing device such as the Apple LaserWriter, choose *Laser Print...* (⌘-P) from the *File* menu. The Page Setup dialog box allows you to specify either landscape or portrait orientations, reductions and enlargements of 25% to 400% as well as several other options such as larger print areas, printing in gray scale, multiple page layout, etc.

If you are having difficulty printing on a PostScript printer, ensure that you have the most recent version of the printer driver in your system folder. The printer driver should be included on the disks that came with the printer.

Most recent printer drivers spool the print job on your hard drive during the printing process. You should always ensure that you have at least 2 MBytes free on your hard drive when printing NoteWriter documents. Very large or dense documents may require even more memory to print.



5.4: LaserWriter Print Job Dialog Box

⚠ If you select *Laser Print...* with a non-PostScript printer connected, a message will notify you of the printer incompatibility.

There are endless printing possibilities with the various page sizes, paper sizes, reduction percentages and tiling configurations in Laser mode. Basically, you can print any size document many different ways depending upon the resolution you want. Remember, laser printers have a fixed resolution (eg. 300 dots per inch or 600 dots per inch) -- as you reduce the score, you lose clarity. For miniature scores, photocopy reduction of a larger page may produce a better result than a drastic laser printer reduction. The table below shows the document size and the reduction percentage which fits on a single page of letter size paper. The document sizes assume a 1/2 inch margin on all sides. With tiling, you may use multiples of these sizes (e.g. 16" X 11").

Document Size	Reduction %	Orientation
8.5" X 11"	100	Portrait
9.5" X 12"	90	Portrait
10.5" X 13.5"	80	Portrait
11" X 14.5"	75	Portrait
12" X 15.5"	70	Portrait
14" X 18"	60	Portrait
11" X 8.5"	100	Landscape
12" X 9.5"	90	Landscape
13.5" X 10.5"	80	Landscape
14.5" X 11"	75	Landscape
15.5" X 12"	70	Landscape
18" X 14"	60	Landscape

The same principle can be applied to enlargements. To print at 125% (with portrait orientation) the recommended document size is 6.5" X 8.5".

Tiling

Tiling is the process used to print a large document in pieces so that they can be taped together to recreate the original large page. Since most laser printers (including the LaserWriter) cannot print on paper larger than legal size, this procedure is necessary for printing orchestral-sized scores.

ⓘ If you have access to a large-format laser printer, it is possible to print large pages either with a specialized driver for this printer or through a page layout program. The procedure for transferring NoteWriter files to page layout programs is discussed in Chapter 8.

Whenever you print a document, the area of the page that will be printed is determined by the rectangular area that is highlighted when the *Show Overview* window is displayed. Any portions of the score that are outside this rectangular area will not be printed. In order to print the portions of the document that outside of this area, you must either change the reduction percentage (in the Page Setup dialog) so that the entire document is within the rectangular area or you must print the page in several pieces. To print the document in several pieces, you should print the first part of the score with the print area (i.e. the highlighted rectangle) placed at one location of the document, then adjust the print area (by dragging the highlighted rectangle) to a different location and print this portion of the document.

Printing Large Pages

As an example, we will run through the procedure for printing a 10" X 15" document in two tiles (at full size).

- select *Show Overview* from the *Windows* menu and set make sure the print area is positioned at the top of the page.
- print the document (using landscape orientation at 100%)
- select *Show Overview* again (if it the Overview window is not already visible) and drag the highlighted rectangle (i.e. the print area) half way down the page - allow for at least 1" of overlap between the two areas.
- print the document again (also using landscape orientation at 100%)
- Tile (tape) the two portions of each page together.

Obviously, the entire document could have been printed on a single page (portrait orientation) at 70% or 75% reduction.

A Note Concerning the Printing of Large Pages:

When printing large documents in pieces on certain laser printers (eg. early version of the Apple LaserWriter), you will find that the images at the bottom of one page do not align accurately with the top of the next page. This is a problem with the optics of the LaserWriter -- lines drawn on either side of the page are not perfectly parallel. The problem is especially noticeable on Legal-size paper printed in landscape orientation. One way of minimizing the distortion is to print the first page normally, then print the second page with the *Flip Horizontal* and *Flip Vertical* options set. Alternatively, you can control the position of the overlap between adjoining pages so that relatively few images cross from one page to another (in an orchestral score, this means splitting pages between systems or orchestral groups).

Changing the Page Size

To change the document page size during editing, select the *Change Page Size* item in the *Control* menu and enter the new size. Images on the score are not affected by the change to the document size.

If you are increasing the score size, the staves should be extended manually by selecting their right edge (Control Point 2) and adjusting them to the new margin. If you are reducing the score size, you should first remove or adjust any images which will be outside the new margins (eg. the ends of staves should be adjusted to the left).

Postscript Settings

A PostScript Settings dialog box can be found in the *Control* menu. This dialog box sets a number of PostScript variables which alter the appearance of the certain images when the document is printed in Laser mode. The settings for Beam Thickness and Distance between Beams are reflected on the screen, the others are only apparent when the page is printed. These settings are not saved as part of the document, but may be saved in your NoteWriter preference file by choosing the *Save Preferences...* item from the *File* menu.

Currently, the attributes which can be set are:

- 1) Beam Thickness (3, 4 or 5 pixels)
- 2) Distance between Beams (4, 6 or 8 pixels)

- 3) Slur and Tie thickness (max thickness = 2, 2.5, or 3 pixels)
- 4) Curly Brace Thickness (Thin, Medium or Thick)
- 5) Staff Line Thickness (.25, .5, or .75 pixels)
- 6) Standard Line Thickness (.5, .75, or 1 pixel)

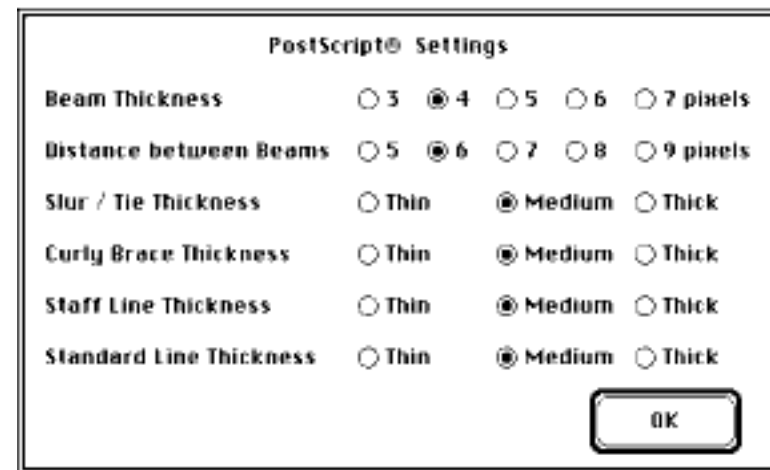


Fig. 5.5: PostScript Setting Dialog box

The examples below show beams and slurs at different PostScript settings:

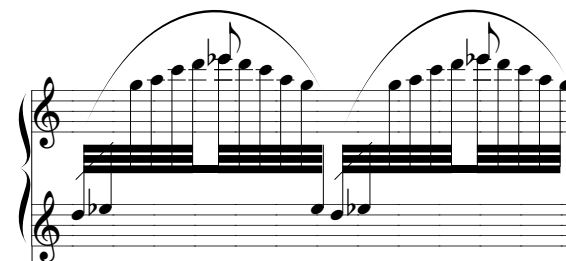


Fig. 5.6: Thick Beam and Slur Settings

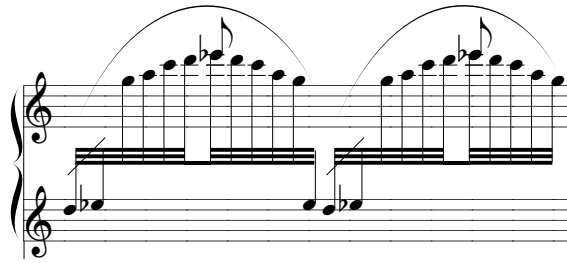


Fig. 5.7:Thin Beam and Slur Settings

PostScript Files

As well printing your documents directly from NoteWriter, you can save your scores (or excerpts of your scores) as Encapsulated PostScript (EPS) files. EPS files can be imported into most word processors and page layout programs (eg. Microsoft Word and Aldus PageMaker) and the NoteWriter excerpts can printed from these applications. For more information on Encapsulated PostScript files refer to Chapter 8.

Chapter 6 - Alignment Aids

There are a number of devices which aid the user in correctly spacing and aligning your music. Ultimately, however, every image is adjustable and moveable whether or not alignment aids are used during input.

Ruler

The NoteWriter ruler can be turned on and off with the *Ruler* item (⌘-R) in the *Control* menu. It is drawn along the top and left edge of the Score Window, and shows the current position of the window within the document. The Ruler is always drawn from the original origin of the document (i.e. top-left corner of the page). The maximum height and width of the ruler is 36 inches, or 90 centimeters.

ⓘ To change the measurement units from inches to centimeters, use the *Set Ruler...* menu item in the *Control* menu.

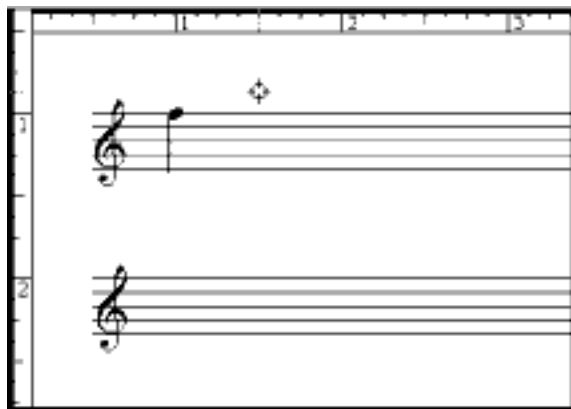


Fig. 6.1: NoteWriter Ruler

As you move the cursor, horizontal and vertical pins (short dotted lines) appear in the ruler at the current position of the cursor. These pins may be used to help align images, or to aid in the spacing of images on the page.

ⓘ The Ruler has been enlarged to correspond to the NoteWriter screen images. Inches on the ruler are 25% larger than normal.

Grid

The Grid is an automatic adjustment feature. When the program is launched, the Grid is engaged, although it may be turned off and on with the *Grid* item in the *Control* menu (⌘-G). The Grid is invisible, and is set to 4 pixel X 4 pixel squares. The function of the Grid is to alter the positions of most images slightly so that they are aligned with other images. For example, when a note is entered, the Grid ensures that it is centred either on a staff line or in a staff space. When a beam is entered, the Grid adjusts it horizontally so that it meets the note stem. Editing commands, (e.g. Adjust, Move, Paste) also leave images aligned to the Grid.

If you do not want note heads and other images to be correctly placed on staff lines and spaces, or you want more precision when moving or adjusting a portion of score, the Grid may be turned off, and all objects freely positioned. If you notice that beams and notes are not properly aligned, it may be that the Grid was not enabled when these images were drawn. The incorrect images should either be re-drawn with the Grid on, or adjusted to their correct position with the Grid off.

ⓘ Because of the resolution difference between the Macintosh screen and High-quality printers, it is possible that two images may appear to be joined on the screen, but be a short distance apart when printed. To avoid this discrepancy, keep the Grid on except when it is absolutely necessary to remove it.

Defaults

Defaults are a collection of preset alignment tendencies. They are initially enabled, but may be turned on and off with the *Defaults* item in the *Control* menu (⌘-D). Defaults cause some music images to be adjusted to their standard position on or relative to the closest staff. In keeping with the basic philosophy of NoteWriter, the Defaults may be disengaged at any time. When Defaults are active, the following symbols are adjusted in the following ways:

Rests -- all rests are adjusted vertically to their standard position on the closest staff. If the Vertical Alignment Bar is also engaged, the horizontal position of the rest will be adjusted to the V.A. Bar.

Clefs -- all standard size clefs are adjusted vertically to their normal position on the closest staff.

Barlines -- barlines, double barlines and repeat barlines are adjusted so that they connect the top line of the top staff with the bottom line of the bottom staff in the closest system. If Defaults are disabled, barlines will be drawn the height of a single staff down from the cursor position.

Global Barlines -- global barlines are normally drawn between all established systems. With Defaults disabled, single barlines will be drawn on all staves of the page at the horizontal location of the cursor.

Beams -- the direction in which beams are drawn is automated when Defaults are engaged. The system looks at the first cursor position and draws the beams in an upward or downward direction depending upon the first mouse click relative to the middle line of the closest staff. If the first mouse click was above the middle line, then the beams are drawn in a downward direction, and vice versa. If Defaults are disabled, upward drawing direction for beams (i.e. beams below notes) is specified with the commands "bb", "aa", "gbb" and "gaa". When adding beams to notes that are in extreme registers, remember to place the beam on the opposite side of the middle staff line.

Notes -- when Defaults are disabled, ledger lines are not automatically added to notes. Ledgers may later be added with the Add Ledgers menu item, or with the "l" Command.

! All of the above Defaults are turned off when the Disable Defaults menu item is selected. As in the case of the Grid, it is recommended that the Defaults normally be left enabled, and disabled only when needed.

Vertical Alignment Bar

The Vertical Alignment Bar (V.A. Bar) consists of a dotted line running the entire length of the page with a box affixed to the line, and positioned on one of the staves. It is activated by the *Alignment* item in the Control menu (⌘ - L). While active, all notes and rests will be adjusted horizontally so that they appear at the position of the V.A. Bar regardless of where the mouse was originally clicked.

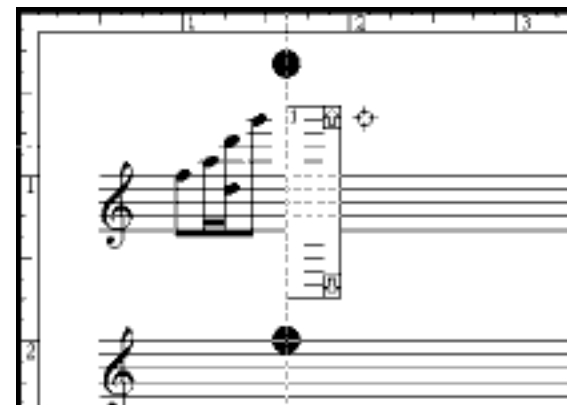


Fig. 6.2: Vertical Alignment Bar

There are six methods of moving the Vertical Alignment Bar horizontally:

- When you depress the Space bar, the V.A. Bar shifts to the right the distance specified in the Alignment dialog box (choose *Set Alignment...* from the *Control* menu). Holding the Shift key down and depressing the space bar will shift the V.A. Bar to the left.
- When you depress the Tab key the bar will move to the right a multiple of the space bar increment (the multiple -- X 4, X 6 or X 8 is also determined by the *Set Alignment...* menu item). As above, Shift-Tab moves the Bar to the left.
- You may use the Back-quote key or the Shift and Back-quote keys to move the bar by its smallest increment (4 pixels) to the right or left. This is useful for making fine adjustments to the position of the V.A. Bar.

! The Back-quote key (') also has the tilde (~) character on it and is located different places on different keyboards - sometimes it is immediately to the left of the spacebar and sometimes it is the top-left key on the keyboard.

- You may place the cursor in either of the black circles which are centred on the vertical line and drag the Bar to a new position.
- Although not yet discussed in the manual, it is possible to move

the V.A. Bar with the Keyboard controls in the Keyboard Window. The left and right arrows shift the Bar increments to the left and right.

- The *Auto Increment* item can be selected from the *Control* menu. This feature causes the Vertical Alignment Bar to move automatically after a note or rest has been added. The distance of the increment is a multiple of the current Alignment setting (determined by the *Set Alignment* menu item.) The increment distances are as follows:

Sixteenth note	- Alignment setting
Eighth note	- 2 X Alignment setting
Quarter note	- 4 X Alignment setting
Half note	- 8 X Alignment setting
Whole note	- 16 X Alignment setting

(Smaller rhythmic values are set to short default distances.)

To shift the Vertical Alignment Bar up and down the page, click on the small arrows in the top-right and bottom-right corners of the Vertical Alignment box. If you click on the up arrow, the V.A. Bar shifts to the staff immediately above the current staff and if you click on the down arrow, the V.A. Bar shifts to the first staff below. The visible portion of the document is adjusted so that the new staff appears on the screen.

! If you input images and you don't see them on the screen, check to see whether the V.A. Bar is on. If the V.A. Bar is situated at the very edge of the window, the notes and rests appearing at this position may be only partially visible.

Vertical and Horizontal Guides

The function of Vertical and Horizontal Guides is to aid in the alignment of notes, rests and other images in a large score. Essentially, the guides are dotted lines which run the entire height or width of the document. They are placed on the document by selecting either the Vertical Guide tool or the Horizontal Guide tool and clicking the mouse at the position you want the guide drawn. Guides are aligned to the Grid when the Grid is enabled. You can remove individual Guides by selecting the tool again and clicking on an existing line, or you can clear all the guides on the page by clicking on the small square in the upper-right corner of the Guide tool box.

In practical terms, Vertical Guides are useful for placing a marker at each beat or sub-beat within a measure. In the example below, Guides have been placed at the beginning of each of the three beats. If you were to scroll down the page, the dotted lines would mark the horizontal position of these beats.

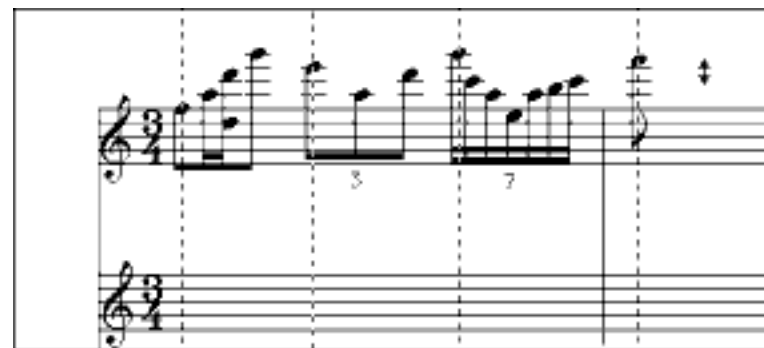


Fig. 6.3: Vertical Guides

Vertical Guides are also useful for aligning barlines and margins. For example, if you want the right margins of your staves aligned, you can place a guide on the final barline of one system and stretch or compress the other systems so that their final barlines are also aligned to the Guide.

Horizontal Guides are useful for the alignment of text, dynamic markings, crescendi and any other images that you want to be aligned across the page.



Fig. 6.4: Horizontal Guides

Chapter 7 - Advanced Input Methods

The standard method of adding images to the score is to type a command on the keyboard and specify the placement of the image by clicking the mouse button. In addition to this input method, there are a number of other ways in which images can be added to the score - QuickScrawl™ entry, On-screen Keyboard entry and Numeric Keypad entry. The Auto-Beam feature is also described in this chapter.

QuickScrawl

QuickScrawl is an extended mouse-entry method and are available at all times. The purpose of QuickScrawl is to allow NoteWriter images to be quickly drawn (or "scrawled") using the mouse as a drawing tool. Immediately after drawing, the scrawl is analysed and is replaced by the desired NoteWriter image. The advantage of QuickScrawl is that the images can be quickly added to the document without having to change the Current Command.

There are three QuickScrawl modes, each defined by the cursor used - Pencil, Quill and Crayon. To activate these modes, a particular key is held down on the keyboard.

Key Depressed	QuickScrawl Mode
Shift OR Caps Lock	Pencil
Option	Quill
Command (⌘)	Crayon

While one of these keys is held down, the cursor appears as the suggested drawing instrument. If the mouse button is depressed, a line will be drawn on the screen as the mouse is moved. When the mouse button is released, the QuickScrawl drawing you have made is matched against templates of possible NoteWriter images, and if there is a match, the NoteWriter image is placed on the screen at the location of the drawing. Usually, the initial position of the drawing is used to position the NoteWriter image.

Each of the three QuickScrawl modes is used to draw a particular subset of NoteWriter images. Since some QuickScrawls are used in different modes to represent different images, it is important to remember which categories of images are drawn by which cursor.

The images are divided as follows:

Pencil	Quill	Crayon
Rests	Beams	Dynamic Markings
Barlines	Some Notes	Articulation Markings
All Notes		Ornaments
Flags		Accidentals
Clefs		

When using QuickScrawl it is important to think of this activity as a kind of shorthand. You are not really trying to draw the image freehand, but rather are simply creating a series of line segments that will be matched to the desired image's template. All "scrawls" are reduced to a series of straight lines in one of the eight compass directions (N, NE, E, SE, S, SW, W, NW). To get accurate results, keep your lines straight and as close to the compass directions as possible.

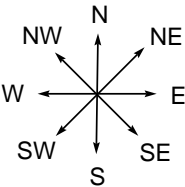


Fig. 7.1: The Eight compass directions of QuickScrawl.

The procedure for adding an eighth note (with a downward flag) to your score with QuickScrawl would be as follows:

- The command line, usually containing a commonly used symbol, such as "q" for quarter note, is left unaltered.
- Ensure that you are in insert mode (the insert box should be highlighted.)
- The Shift key is held down, and the cursor, which now resembles a pencil, is moved to the starting position -- in this case, the third staff space (from the bottom).
- The mouse button is then depressed and the mouse is moved in the pattern which represents the eighth note (South followed by North-East as shown below). It is important to try to keep the lines as close to the 8 compass directions as possible.



Figure 7.2: A QuickScrawl Gesture

The length of the lines is unimportant since it is the sequence of compass directions which is used for identifying patterns. If NoteWriter fails to find a match, the screen will remain unchanged and the drawing may be repeated. If an incorrect image is drawn, it may be cleared with Undo.

In this case, as in the case of many NoteWriter images, the position of the eighth note is adjusted to the Grid (assuming it is engaged) and horizontally to the Vertical Alignment Bar (if it is on.)

Pencil Routines

The Pencil routines are the most commonly used. You may find it convenient to use the "Caps Lock" key (rather than holding down the "Shift" key) if you are using QuickScrawl to enter a series of images. (The "Option" and "Command" keys may still be used to activate the Quill and Crayon with the "Shift" or "Caps Lock" keys down.)

Normally, the starting position of the Pencil (or the target cursor before it is transformed into a Pencil) determines the location of the NoteWriter image on the screen. Rests and barlines will normally default to the closest staff (provided Defaults are engaged) and notes and rests will normally be drawn at the Vertical Alignment Bar (if it is on). Notes are all drawn at their standard length. To get non-standard note stems, the stem or flag must be altered with the Adjust procedure after the image has been added.

Quill Routines

Quill routines are different from Pencil and most Crayon routines because they are sensitive to the starting and ending positions of the "Quickscrawl". Normally, beams are drawn from the beginning quill position to the final quill position regardless of how many strokes have occurred between them.

In the case of all beams, NoteWriter decides whether a straight beam

"b - type" or angled beam "a - type" is to be drawn by the location of the starting and ending cursor positions. Angles less than 10 degrees above or below the horizontal will be drawn as straight beams others will be angled from the first to the second cursor positions.

Both the Pencil and the Quill can be used for entering quarter notes and flagged notes.

Crayon Routines

The Crayon is used to add dynamic indications, articulation markings, ornaments and other specialized images. The arpeggio, trill and octava are drawn from the starting cursor position to the ending position while all others are positioned according to the starting cursor position (as in the case of Pencil routines).

A complete chart of QuickScrawl commands is provided in Appendix 2. The chart shows the QuickScrawl pattern, the NoteWriter image it represents, and information on where the starting cursor position should be. The fourth column lists the NoteWriter features which affect the final position of the image: the Grid, Defaults (if they are enabled) and the Vertical Alignment Bar (if it is on).

On-screen Keyboard

NoteWriter provides an on-screen piano keyboard which may be used to enter notes into the score. Select *Keyboard* (⌘-E) from the *Windows* menu to make the keyboard visible. In effect, the Keyboard is a complex input controller. In addition to adding notes to the score the boxes in the Keyboard Window can be used to add or alter accidentals, to adjust pitches, to add bar lines and to move the Vertical Alignment Bar around the document.

In order to use the Keyboard to enter notes, the following steps must be followed:

- The Keyboard Window must be visible.
- The Vertical Alignment Bar must be on -- notes are drawn on the staff indicated by the V. A. Bar and at the location of the V.A. Bar. If the V.A. Bar is not moved (by depressing the space bar or clicking the arrows in the Keyboard Window), the next note will be drawn at the same horizontal location.
- The image to be drawn must be entered as the Current Command.

If there is no Command, or the Command is not a note, nothing will be added to the score.

Remember, all input methods in NoteWriter may be used interchangeably. You may keep the Keyboard Window visible, and still enter notes using other methods. Also, the Keyboard controls can be used to modify the last note entered (i.e. alter accidentals, add dots etc.) regardless of the input method used.

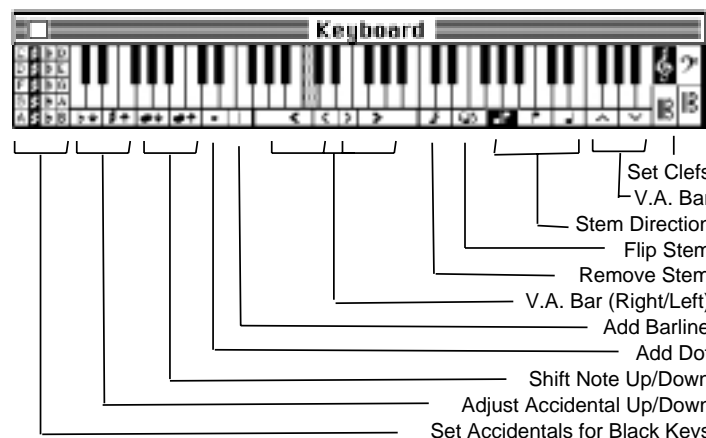


Fig. 7.3: Keyboard Window

Piano Keyboard

The central component of the Keyboard window is the 5 octave piano keyboard. When you depress the mouse button with the cursor on one of the keys the corresponding pitch is sounded from the Macintosh internal speaker and the note (indicated by the Current Command) is entered on the score. The volume of the sound can be altered in the System Control Panel (under the Apple menu).

! Because of the changes to the Macintosh Sound Manager and to the Macintosh System file, the keyboard may not sound on your computer.

Set Clefs

Since NoteWriter has no immediate knowledge of which clef is associated with which staff, the clef must be set by clicking the appropriate box. All notes played on the keyboard are drawn on the

current staff (which is determined by the Vertical Alignment Bar) at the pitch relative to the specified clef. In other words, if you play middle C (which is the gray note on the keyboard) the note will appear one line below the staff if the treble clef is selected, one line above the staff if the bass clef is selected, on the middle staff line if the alto clef is selected and on the second line if the tenor clef is selected.

Move Vertical Alignment Bar Up or Down

The up and down arrows shift the Vertical Alignment bar to the previous or next staff in the score. The new staff becomes the current staff (i.e. the staff on which notes will appear), and the document is adjusted so that the staff is visible in the window.

Set Stem Direction

There are three settings for stem direction. The settings determine which direction stems and flags will be drawn when notes are input. The highlighted box indicates the current setting, which may be changed by clicking one of the other boxes. The three settings are:

- Default direction (above the middle line - stems down, middle line and below -- stems up)
- Force stems down (lower voice of a two part composition)
- Force stems up (upper voice of a two part composition)

Flip Stem Direction

Clicking the mouse in this box flips the direction of the stem or flag. This procedure operates on the last image added to the score (provided it is a note).

Remove Stem

Clicking this box causes the stem of the last image to be eliminated. This feature can be used for chord clusters, where notes are placed on either side of the stem.

Shift Vertical Alignment Bar Right and Left

There are four horizontal shift areas. The thick arrows move the V.A. Bar the distance set with the *Set Alignment* menu item. The thin arrows shift the Bar a distance of a single note width. The main purpose of the thin arrow is to shift the V.A. Bar to the other side of the stem (for creating chord clusters). The normal methods of moving the V.A. Bar may also be used (i.e. depressing the Space, Tab or Back-quote keys.)

4) the note on D with no accidental

Add Barline

This box causes a barline to be drawn at the position of the Vertical Alignment Bar. After drawing the barline, you should increment the V.A. Bar to the right to allow some space between the barline and the next note.

Add Dot

This box causes a dot to be added to the last image provided it is a note. To remove the dot, choose the *Remove Modifiers* item from the *Modify* menu or the *Remove Dot* item from the *Ext.* menu.

Shift Note Up or Down

These two boxes cause the last note entered to be shifted up or down in the score. This is useful for error correction or for enharmonic adjustments to notes.

Shift Accidental Up or Down

These two boxes cause the accidental associated with the last entered note to be altered. If there is no accidental, one will be added. The accidentals appear in a circular sequence as follows:

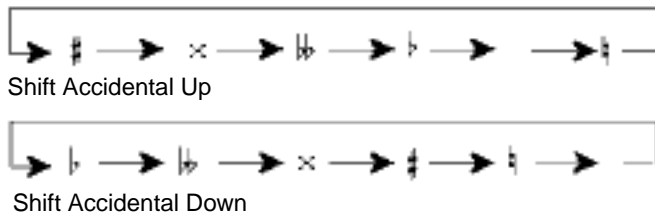


Fig.7.4: Shifting Accidentals

Set Accidentals for Black Keys

Although not a complete enharmonic system, this table controls which note and accidental appears when the black keys are played. The five rows in the table each refer to one of the black pitch classes (i.e. a pitch in all octaves) beginning with the C#-Db key. The four columns in the table indicate which note and accidental appears. In the case of C#, the choices are:

- 1) the note on C with no accidental
- 2) the note on C with a sharp accidental
- 3) the note on D with a flat accidental

Normally, the current key signature (if there is one) is set by selecting the appropriate notes in the first or fourth columns. Doing this will stop accidentals that appear in the key signature from appearing. The example below shows the normal configuration for two different keys. Notice that this table allows leading tone accidentals (e.g. F sharp in G minor) to be set as well as the accidentals in the key signature.



Fig. 7.5: Setting Key Signatures

The Key Signature table does not accommodate keys with more than 5 accidentals. Also, there is no mechanism for automatically adding sharps or flats to the white piano notes. These alterations must be made with the Shift Accidental boxes.

Numeric Keypad Entry

Numeric Keypad entry is active at all times and may be used to enter notes or to modify any notes added with other input methods. As with the On-screen keyboard, the Vertical Alignment Bar must be active for notes to be added with Numeric Keypad entry. The keys of the numeric keypad have the following functions:

- 1) The Enter key is used as a shift key.
- 2) Numbers 1 through 9 are used to enter notes. The note type is determined by the Current Command and the number indicates the diatonic interval above or (if the Enter key is held down) below the previous note. For example: 1 is a unison, 2 is a step above, Enter-3 is a third below). The initial starting position is the top line of the staff.

Normally stem direction is determined by the pitch (with notes above the middle staff line having stems down and notes below the middle staff line having stems up.) However, you may also use the Stem Direction settings in the Keyboard window to force stems to be drawn up or down. When Auto-beam is active, notes will be

grouped into beams as they are entered.

- 3) The "0" key adds a rest (at the position of the V.A. Bar) that is equivalent to the note type specified by the Current Command - (eg. if the Command is "q", a quarter rest will be added.)
- 4) The "." key adds a dot to the previous note (and increments the V.A. Bar.)
- 5) The "+" key adds accidentals to the previous note. The accidentals are added by ascending semitones: natural - sharp - double sharp unless the Enter key is held down in which case the direction of the semitones is reversed: natural - flat - double flat. This key can be used to modify notes added with any NoteWriter input method.
- 6) The "-" key is used to jump back to the previous note. This is necessary when Automatic Increment is engaged and you want to build chords within a single voice.
- 7) The "*" key is used to flip the stem direction of the previous note.
- 8) The "/" key is used to add barline at the position of the V.A. Bar.
- 9) The "=" key is used to eliminate the stem of a note (for building chords.) When the key is depressed a second time, the stem is restored without a flag (if one previously existed).
- 10) The "clear" key acts as a carriage return. It scrolls the document back to the left edge of the page and moves the Vertical Alignment Bar to the beginning of the next staff.

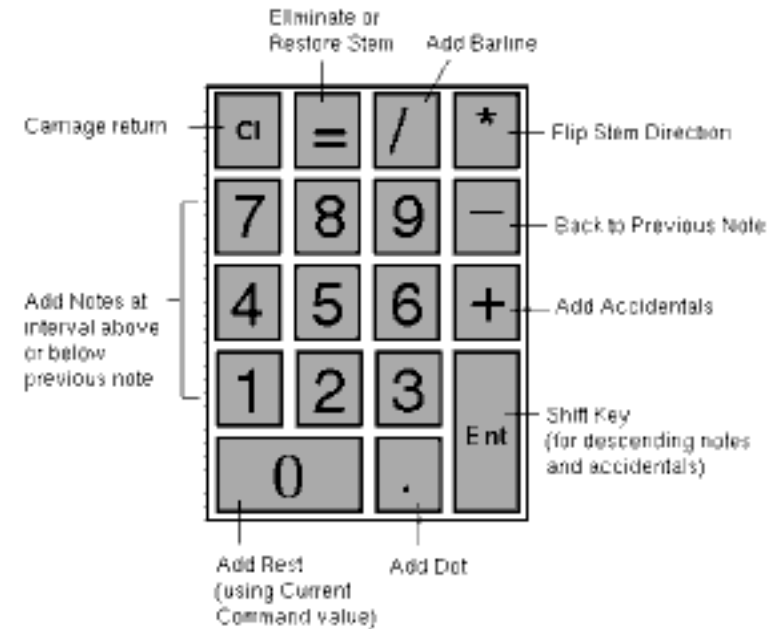


Fig. 7.6: Numeric Keypad

Auto Beaming

Auto Beaming is turned on with the *Auto Beam* item (☞-1) in the *Control* menu. The beat size of the beam group is specified with the *Set Auto Beam...* item in the *Control* menu

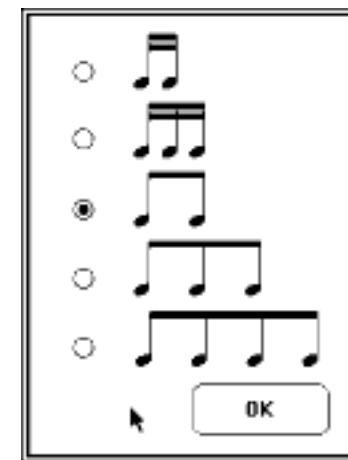


Fig. 7.7: Set Auto Beam Dialog

When Auto Beaming is active, the notes and rests you enter are collected until a full beat has been entered. At this time, the notes will be formed into a beam group and the next group of notes and rests collected. Notes that are placed at the same horizontal location as the previous note (i.e. in chords) will not be counted as new notes.

While using auto beaming, you can reset the beam counter (which keeps track of the notes that should be included in the beam group) by choosing the *Reset Auto Beam* item (⌘ - 2) in the *Control* menu. When a barline is entered or the Clear key (i.e. a carriage return) is hit the beam counter is automatically reset.

If incorrect beaming occurs, you can select Undo to remove the beam and choose *Reset Auto Beam* at the beginning of the next beat.

The Auto Beam feature is especially useful when used in conjunction with Auto Increment and either the On-screen Keyboard or Numeric Keypad entry.

! Auto Beaming should only be used for entering relatively simple rhythmic material - it cannot accommodate triplets or other complex groupings. Remember to turn off Auto Beaming when you are not using it or it may try to beam notes that you do not intend to be beamed.

Chapter 8 - Other Features

Command List

The *Command List...* (⇧-F) item in the *Windows* menu displays an extensive listing of NoteWriter commands along with the image they draw.

Simply click on an image to automatically enter it as the Current Command or click the *Done* button to close the window. Refer to Appendix 4 to see the images in the Command List.

Overview Window

The Overview feature (which is activated by the *Show Overview...* (⇧-F) item in the *Windows* menu) provides a reduced view of the document. The reduction factor depends on the size of the document and the size of your screen, but the entire page will be displayed in the Overview window.

The Overview window may be moved (by dragging the Title Bar) and closed (by clicking the Go-Away box.) As discussed in Chapter 5, the visible portion (print area) of the document appears as a highlighted rectangle in the Overview window. You may indicate a different print area by dragging this rectangle to a new location.

Changes that are made to the score while the Overview window is visible are not updated in the Overview window. However, the changes will appear when the Overview window is redrawn (either by re-selecting the menu item or scrolling to a different page).



Fig. 8.1: Overview window

Change Page Size

To change the size of your page, select the *Change Page Size* item from the *Document* menu. A dialog box, which is similar to the Page Set-up dialog box, appears and a new document size may be specified by dragging the box in the grid or by typing the new values in the Score Height and Score Width text boxes. If you want to specify a size larger than the sizes available with the grid (i.e. larger than 24" X 32"), enter the new size in the text boxes and click the Show Score Size button. You should also indicate whether you want all pages to be altered or only the page that is currently visible.

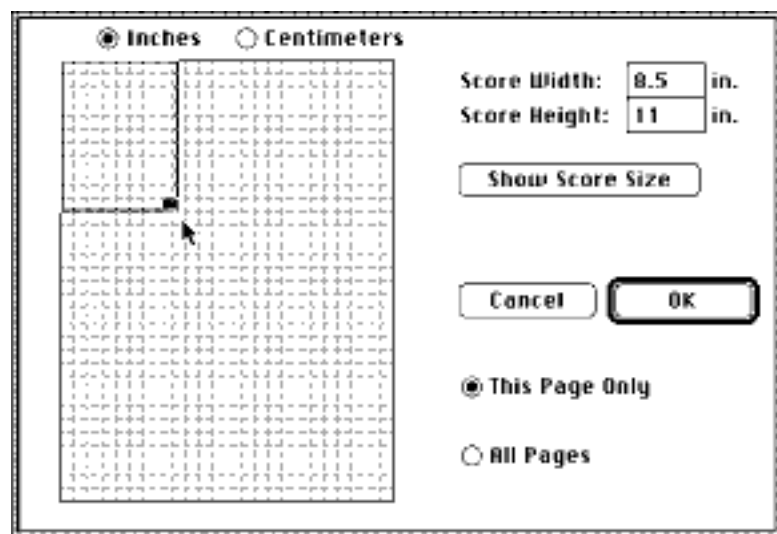


Fig. 8.2: Change Page Size Dialog Box

When you change the page size, the images in the document are not altered. If you widen the document, the right edges of staves will have to be extended manually -- by selecting and adjusting them. If you lengthen the document, additional staves must be added manually (either by copying and pasting existing staves or with the "fst" command). If you reduce the size of the document, you should ensure that all images have been removed from the area being eliminated. Images left in this area are still considered to be part of the document and may appear when the document is printed.

Other File Formats

As mentioned earlier, NoteWriter supports two file formats in addition to NoteWriter format. To save a document in another format, select *Save As...* (from the *File* menu) and choose one of the three possible formats

- NoteWriter format - used to save the current NoteWriter document with a different name.
- PostScript format - used to save the document as a PostScript file or in Encapsulated PostScript format for inclusion in page layout programs or word processors.
- Paint format - used to save the current page as a bitmap in MacPaint format.

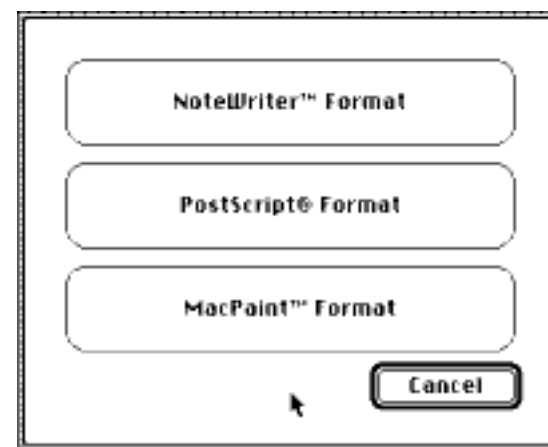


Fig. 8.3: Save As... Dialog Box

NoteWriter Format

Choosing *Save* (⌘-S) from the *File* menu will save the entire NoteWriter document and all its attributes in standard NoteWriter format. It is recommended that you select *Save* regularly while working to avoid losing your work through a system or program crash.

Selecting *Save As...* from the *File* menu and choosing the *NoteWriter Format* button will allow you to save your file with a different name. The original file will remain on disk as it was when you last saved it.

PostScript Format and Encapsulated PostScript

To save a document or a single page as a PostScript file or in EPS format, select the *Save As...* item in the *File* menu and choose the *PostScript® Format* button. To save a portion of the page in EPS format, select the area to be saved (with the *Select-Rect* or *Select-Region* tools) and choose the *Save Selection as EPS...* item in the *File* menu.

A series of dialog boxes allow you to set the various options for saving your PostScript or EPS file. You will first be asked to specify a printing scale for your file. This is the point size that the images will be drawn at if no additional reduction or enlargement is performed.

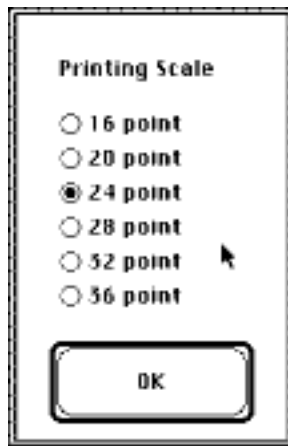


Fig. 8.5: Printing Scale Dialog Box

The chart below shows the possible point sizes and their equivalent reduction / enlargement percentages:

16 point	67%
20 point	83%
24 point	100%
28 point	117%
32 point	133%
36 point	150%

Since most of the applications that accept EPS files have their own facility for scaling, you may want to simplify the process by saving the file at normal size (24 point.) The excerpt can be scaled or resized after it has been imported into the page layout or word processing program.

After setting the page scale, you will be prompted to set the Document Type as either an Encapsulation or as a PostScript file. Encapsulations (which are in Encapsulated PostScript format) are usually single page excerpts (or smaller) that are to be imported into other graphics programs. PostScript files are self-contained files (which may include multiple pages) and which can be downloaded directly to a PostScript printer. Since PostScript files include the PostScript code to print the page, they are not intended to be imported into page layout programs - use Encapsulation to do this.

 For those familiar with Macintosh file types, EPS files are of type EPSF whereas PostScript files are of type TEXT.

If you have chosen to save a PostScript file, a dialog box will prompt you to choose either *This Page Only* or *Entire Document*. *This Page Only* refers to the page that is currently visible.

Next, you will be asked whether you want to save a picture (in PICT format) with the PostScript file. The picture is a bitmap image of the page (or the selected area if you have chosen *Save Selection as EPS...*) The picture is saved with the EPS file and will appear when the EPS file is imported into a page layout or word processing program. If you are exporting the EPS file to a non-Macintosh computer, there is no point saving the picture since the program will not be able to display it.

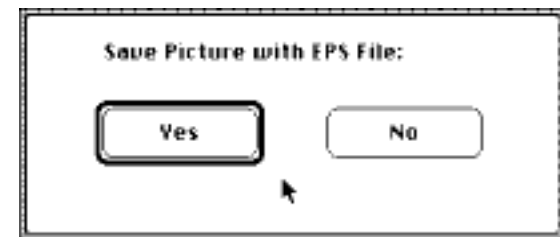


Fig. 8.5: Save Picture dialog

Once these options have been set, you will be prompted to give the PostScript file a name. Be sure to give it a unique name so that you do not accidentally write over an existing NoteWriter file. As a convention, you may want to give all PostScript files a suffix (e.g. file.eps).

When saving a fragment of the score as EPS, only images whose primary Control Point is within the selected area are sent to the file. This means that staves are not included in the EPS file unless they are included in the selection. In some cases, you may want to add a short staff on top of an existing staff so that the shorter staff will be included in the file. For details on how to load EPS files into specific page layout, word processor and graphics applications, refer to the user's manuals of these programs.

As an example, the procedure for combining a music excerpt with text

in the PageMaker™ program is as follows:

- Select the excerpt with the Select-Rect tool. Include a staff in the selection if you want a staff drawn. All images whose first Control Point is selected will be included in the PostScript file, and the images will be clipped to the size of the rectangle.
- Choose the *Save Selection as EPS* item in the *File* menu and give the file a new name.
- Open the PageMaker file you want to add the NoteWriter excerpt to.
- Select the *Place* item in the PageMaker *File* menu and choose the file you created in NoteWriter. Once the file is loaded, the cursor changes to indicate that a file in PostScript format is ready to be added to the document. Position the cursor at the location of the top left corner of the encapsulated fragment and click the mouse button.
- The fragment appears as a gray rectangle with the dimensions of the original selection. If a PICT has been saved with the file, it will appear in the box. If not, the title of the excerpt, the date and time created and the creating application (i.e. NoteWriter) will appear in the rectangle.

It is now possible to distort, crop, scale and adjust the position of the excerpt using PageMaker's standard editing procedures. Other page layout programs should operate in a similar fashion.

Paint Format


To save a single page in Paint format, select the *Save As...* item in the *File* menu and choose the *MacPaint Format* button. MacPaint format is readable by many graphics applications and may be used to create graphic scores or to cut and paste fragments (as bitmap images) into many Macintosh word processors or graphics programs.

The procedure for doing this is:

- Save the score in Paint format and quit NoteWriter
- Open the graphics program (e.g. MacPaint, FullPaint™, SuperPaint™, Paint Cutter™ etc.) and load the file you have saved into the application.
- Copy the desired portions of the score and paste them into the Scrapbook (in the Apple menu).

- Quit the graphics application and open a text document on your word processor.
- Paste the excerpts from the Scrapbook into the text document.

Since NoteWriter screen images are enlarged, a 6.75" X 7.75" document will fill the 8" X 10" maximum size of the MacPaint file. Because of this restriction, it is not possible to save larger areas as Paint files.

 **Paint format is rarely required since the Macintosh system provides a mechanism for capturing screen images (⌘ - Shift - 3). However, if you are working on a Macintosh computer with small screen, saving the page in Paint format may still be useful.**

 **It is NOT possible to open either PostScript or Paint files in NoteWriter. Remember to save your documents in NoteWriter format if you want to open them later.**

Working with Large Documents

NoteWriter allows tremendous flexibility in page size and format, although orchestral-sized scores (because of their size) are somewhat awkward to work with without a large screen. The following suggestions should make the creation of orchestral scores simpler.

Page Setup

- When setting up your initial page, specify the document size and the distance between staves (which may be reduced in some scores.)
- You may also want to leave a slightly larger left margin so that instrument names can be added.
- You should decide how you want bar lines handled in the document - either individually or in instrumental sections, and you should set up the document appropriately. To do this, specify *Other* as the number of staves in a system and enter the staves and braces as you want them.
- Add clefs, key signatures, instrument names and barlines to create a score template. The template should be saved to disk and can be used for each section of the score, saving the document as a different name each time. This will save a substantial amount of page setup time. It is also possible to eliminate and re-position staves to alter the page format as the number of instruments changes.

Entering the Material

- Working on the document is no different than working on a small document, except that the small size of score window makes for a great deal of scrolling. It is advisable to use the Miniature Page in the Scroll Window to move directly to other places in the document, since sequential scrolling can be quite slow.
- When working though the score, you should enter the most complex lines first, then place Vertical Guides at each beat or sub-beat in this part. The other voices can then be correctly aligned to the Guides. Alternatively, if the music is very simple, you can use the Vertical Alignment bar (e.g. one increment of the V.A. Bar for each eighth note).
- Use the global barline and time signature commands - the prefix "&" to add these images on every staff on the page.
- You should examine the document periodically with the Show Overview feature, and save the file regularly to disk.

Printing the Document

- If you are printing the document on a printer with a small page size (e.g. the Apple LaserWriter), you can print a large document by tiling (and piecing the fragments together), by reduction, or by a combination of reduction and tiling.
- Alternatively, you can save the document in EPS format and load it into a page layout program. The entire document can then be pasted onto a large page in the page layout program and printed on a large-format laser printer or phototypesetter. For example, a score with dimensions of 15" X 22" can be loaded into a page layout program and printed on a Linotronic L100 at 75% reduction onto an 11" X 17" page.

Extracting Parts

NoteWriter does not have an automatic part extraction procedure. However, parts may be created quite efficiently by cutting lines from the score and pasting them into another file or into the Symbol Library. For small scores, you can paste the parts onto successive pages in the same document. For large scores, parts should be copied and saved in separate files.

The extracted files may be further edited, so that cues may be added and multiple measures of rests eliminated.

The procedure for extracting an instrumental part is as follows:

- Create a new "parts" document with single staves and the appropriate clef and key signature. The document should be the same width as the original score. It may be useful to use *Save As....* to save multiple copies of this template to disk so it can be used for other instrumental parts. Close the "parts" document.
- Open the original score.
- Set the *Select to Right Edge* menu item in the *File* menu and copy the first line of the score by placing the cursor immediately to the right of the clef and selecting all the material on the staff (without selecting the staff). If you include material belonging to other parts, it may be removed once the passage has been pasted into the "parts" document. Make note of the first pitch of the selected passage so you will have a reference when you paste the material into your parts document.
- Choose *New* from the *Library* menu to create a new Symbol Library and paste the copied material into a the first segment of the library.
- Continue copying lines of this instrument from the pages of the score and pasting them into successive segments of the Symbol Library.
- Once the all the lines of the instrument have been copied into the Symbol Library, close the score and open the blank "parts" document.
- Paste each segment of from the Symbol Library onto successive lines of the "parts" document, dragging each to the correct location (using the first pitch of each passage as a reference).
- Once all the lines have been pasted into the "parts" document, you can add rehearsal letters, bar numbers, tempo indications, cues, and replace multiple measures of rests with the "=" command. Transposition can also be performed by selecting passages, moving the notes up or down on the page and changing the appropriate accidentals. The Shift-Select editing procedure will simplify this process.
- Save and Close the "parts" document and repeat the process for the next instrument.

Chapter 9 - Helpful Hints

Rearranging the Windows

NoteWriter windows are all moveable, so you may want re-position them on the screen to reduce the amount of mouse activity during image entry and editing. To move a window, hold the mouse button down with the cursor in the window's title-bar or the small black square ("handle") at the upper-left or lower-right corner of the window.

The way in which you arrange the windows depends upon the input method you are using. For example, if you are regularly using the Image Palette and Keyboard, you may want to place both of these windows at the bottom of the screen and move the Score Window above them. If you are using a large screen, you may also want to keep the Overview window visible, or partially visible, at one side of the screen.



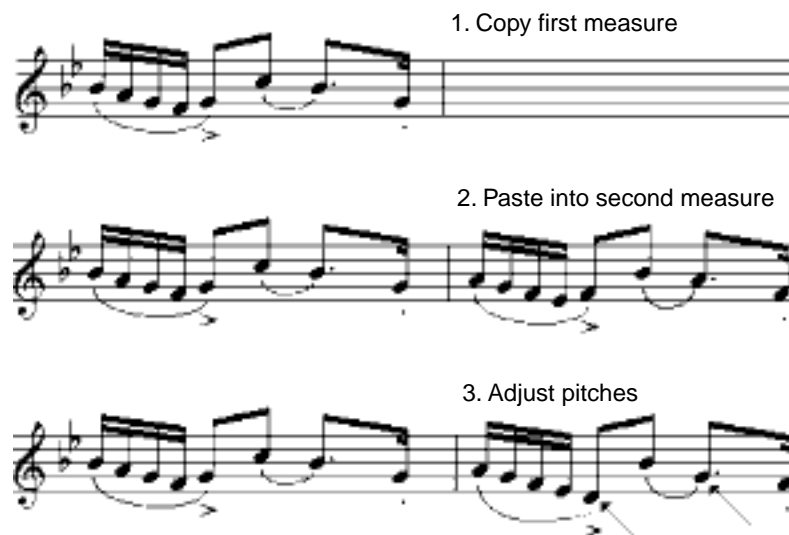
Fig. 9.1: Re-arranging the NoteWriter Windows

If a window becomes hidden by another window, you can bring it to the front either by selecting its title-bar (if visible) or by selecting it from the *Windows* menu. You can store the Window locations (along with the Postscript settings) by selecting *Save Preferences...* from the *File* menu.

Editing Hints

Everyone who uses NoteWriter seems to develop their own style of entering and editing images. There is no right or wrong way of using the program, but the suggestions below should make editing more efficient.

- Use the Undo command frequently. It is faster to remove an incorrectly placed image (with *Undo* or ⌘-Z) than to try to adjust it. Also, if you incorrectly paste onto or cut from the score, Undo the change.
- It is faster to enter multiples of one image (e.g. notes), then go back and add other images (e.g. beams and slurs). When you do this, you change the Current Command less frequently and entry proceeds more quickly.
- It is possible to enter notes without accidentals, then return to the passage and Shift-Select the notes that require accidentals or dots and choose the appropriate item in the *Modify* menu.
- Look for repeated gestures in the score and use the *Copy* (⌘-C) and *Paste* (⌘-V) routines as often as possible. If you see a sequence in the score, enter the first instance of the gesture (draw all the notes, beams, slurs and articulations) and *Copy* and *Paste* the entire gesture to create the second instance. Remember, it is very easy to adjust pitches, so even if you only have a repeated rhythmic gesture, it is probably faster to make a copy of the fragment and alter the pitches than to re-enter all the components of the passage. If you find that if a particular rhythmic group is used extensively in a piece, you will find that it is faster to copy and paste the fragment repeatedly than to enter each group separately. The example below shows how copying, pasting and adjusting can be used to create a similar passage in the score.



9.2: Copying and Pasting to Create Similar Gestures

- If the score requires complex rhythmic groups to be aligned, it is easier to enter the pitches using the Vertical Alignment Bar, and once the gesture is complete, to stretch or compress the group (using the Stretch / Compress routines) to align the notes to the beat. If accurate spacing is required, then the Grid should be disengaged during the adjustment. In the example below, a group of 7 is entered and compressed so that it aligns with a group of 4.

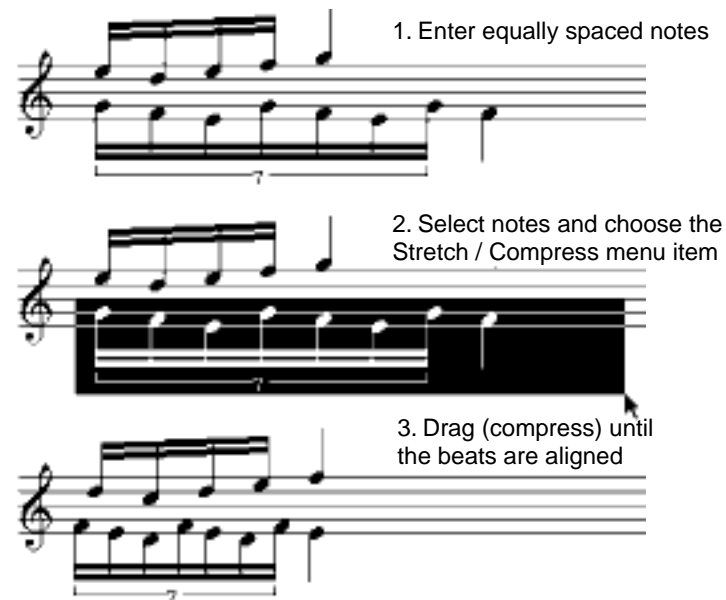


Fig. 9.3: Aligning Complex Rhythms

- Use the *Select to Right Edge* (F7) and *Select to Bottom Edge* (F8) settings whenever appropriate. For example, if you need to adjust a portion of a measure in an orchestral score, set the *Select to Bottom Edge* item and all images to the bottom of the score will be selected.
- Aligning the right margins of the score are best done after the page has been completed. Place a Vertical Guide on the bar line of the longest systems, and stretch the shorter systems so that they are aligned to the Vertical Guide.
- Use QuickScrawl for rests, barlines and dynamic markings (even if you are not using the routines for other images). These images are easily scrawled and entering them this way saves you continually altering the Current Command.

Creating Custom Symbols and Images

The flexible design of NoteWriter allows many types of non-standard notation to be created. To do this, you may have to design your own graphic symbols this can be done either with the NoteWriter graphic

tools or by importing PICT images.

Designing Images in NoteWriter

The simplest method of adding specialized symbols is to use the NoteWriter graphics tools (Draw-Rect, Draw-Oval, Draw-Line) or a combination of NoteWriter images and graphics tools to create the new symbol, and copy and paste it into a Symbol Library. In future, whenever you need the symbol, you can copy it out of the Symbol Library and paste it into the new document. The images below have all been created by combining graphics tools and NoteWriter images:

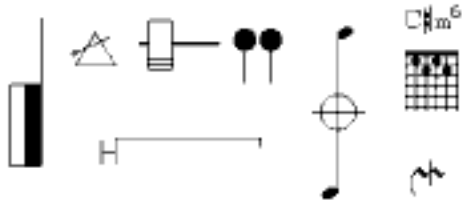


Fig. 9.4: Custom Symbols

Designing Images in a Graphics Program

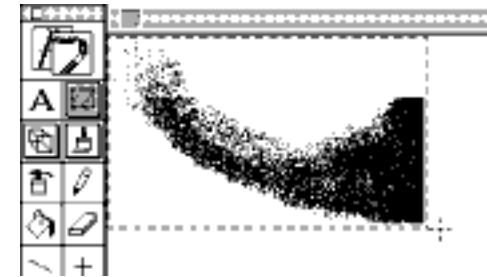
If the graphics tools are not sufficient to create the symbol you need, you can design the image in a Graphics program (such as SuperPaint or ClarisWorks) and import the image (in PICT format) into NoteWriter. The easiest way to import the image is to have both NoteWriter and the graphics program running at the same time. You should be able to select and copy the image (in the Graphics program), switch to NoteWriter, and paste the image into NoteWriter. When the PICT image is first pasted into NoteWriter it is represented by a gray rectangle, and after the PICT is dragged into position, the image is drawn. The gray rectangle is drawn around the PICT image, but it is not printed. If direct copy and paste between applications is not successful, you can copy the images into the Scrapbook and then later paste them into NoteWriter.

Importing PICT Images

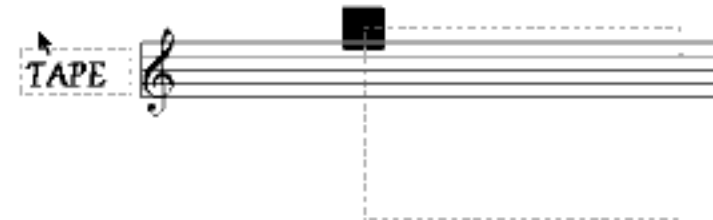
The procedure for importing PICT images is outlined below. It is assumed that both NoteWriter and a Graphics program are running simultaneously (under MultiFinder or System 7.)

- 1 Create in the graphic image or symbol in a Graphics program (eg. SuperPaint 3.0). Select the area to be copied and choose the

Copy item from the *File* menu.



- 2 In NoteWriter, choose *Paste* from the *File* menu



- 3 Place the mouse cursor in the inverted rectangle and drag the PICT image into position. The image will appear when the mouse button is released.

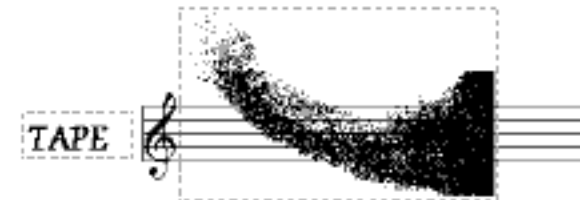


Fig. 9.5: Importing PICT images

The imported PICT can be moved by dragging the top-left corner of the rectangle and it can be resized by dragging the bottom-right corner. When PICT images are resized, the image is stretched or compressed to conform to the bounding rectangle.

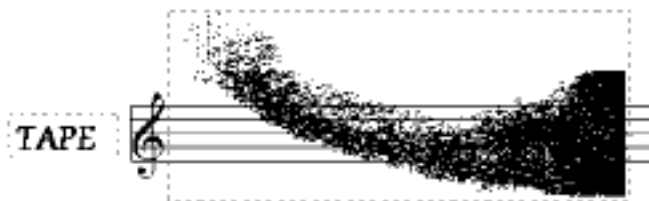


Fig. 9.6: A Resized PICT image

If you do not want the PICT graphics to be displayed, you can hide them by choosing the *Hide Text and PICT* item from the *Control* menu.

 **It is not possible to include imported PICT images in EPS files, so if you plan to encapsulate your score for printing from a page layout program or word processor, you should avoid including PICT images in the NoteWriter document.**

Printer Errors

NoteWriter converts its data structure into PostScript code which is then sent to the printer. If an error is encountered during printing (i.e. a PostScript error is generated), the page will not print, and sometimes no error message will appear. If this happens, you should follow the procedure outlined below:

- 1 Check to see whether the data is being sent to the printer -- a light should flash on your Printer during communication. If the data is not being sent to printer, check that the cables are correctly connected and that the Chooser is set for the printer you are using.
- 2 Save the document as a PostScript file (choose *Save As...* from the *File* menu) and follow the instructions for saving a PostScript file. Try sending the PostScript file directly to the printer with a Font Utility program (eg. LaserWriter Utility.). If you get a successful print using this method, you may want to load the document into a page layout program and print the document from the page layout program. If you get a PostScript error while you are downloading the file, then the NoteWriter document contains some bad data. This is normally caused by an incorrectly entered image, and the only way of saving the file is to locate and remove

the offending image.

- 3 To find an incorrect image, open the NoteWriter document and examine the Control Points by selecting *Show Control Points* from the *Control* menu. See if there are any extraneous Control Points (i.e. Control Points which do not seem to belong to any image) and erase them from the document.
 - 4 If the document still does not print, try copying portions of the document, and pasting them into a new page, and printing the document in pieces. This should help determine which image is causing the error. The following images or situations have been known to cause memory errors in large documents.
 - Excessively large text boxes of any style
 - Text boxes (especially with long lines of text) that have Outline or Shadow styles.)
 - Too many different fonts and styles of text
 - documents with images below the bottom margin
 - some graphic images, especially if they have no dimensions (i.e. they were drawn on one point) or they are reversed (i.e. the second control point is to the left of the first.)
 - multiple measure rests images that are too short to be visible on the page or that were added without a number in them.
-

Appendix 1 - Menus

Menu

About NoteWriter...

Displays version and copyright information.

File Menu

New

Create a new NoteWriter document by launching the Page Setup dialog boxes.

Open...

Open an existing NoteWriter document for editing.

Save

Save the open NoteWriter document onto disk (using its current file name).

Save As...

Save the open NoteWriter document onto disk in either NoteWriter format with a new name, in Encapsulated PostScript format or in Paint format.

Close

Close the open NoteWriter document. You will be prompted to save changes if you have not already done so.

Draft Print @ 75%

When the item is checked, the print size of Draft printing is automatically reduces to 75%.

Draft-quality Print...

Print the document using the QuickDraw screen images on a dot-matrix or non-PostScript laser printer.

Laser Print...

Print the document using Sonata font and PostScript graphics on a PostScript laser printer or phototypesetter.

Page Setup...

Calls the page setup dialog of the currently chosen printer. This allows options such as page layout, print reduction and paper size to be set.

Save Selection as EPS...

Save the currently selected area of the page in Encapsulated PostScript (EPS) format.

Save Preferences...

Save the window positions and current PostScript settings in a preference file.

Quit

Quit the NoteWriter program. You will be prompted to save the document if you have not already done so.

Edit Menu

Undo

Undo the last change made to the document.

Cut

Remove the images from the selected area and save them in the NoteWriter buffer.

Copy

Copy the images from the selected area and save them in the NoteWriter buffer.

Paste

Paste the contents of the NoteWriter buffer onto the screen so that the images can be dragged to the desired location.

Clear

Delete all images which have their primary Control Point in the selected area.

Move

Move (by dragging) all images which have their primary Control Point in the selected area.

Adjust

Adjust (by dragging) the position or dimensions of all images which have a Control Point in the selected area

Stretch / Compress

Stretch or compress (by dragging) the horizontal positions of images within the selected area.

Justify

Horizontally adjust the positions of selected images so that the music fits properly on the staff.

Select to Right Edge

Make the selection box extend to the right edge of the document.

Select to Bottom Edge

Make the selection box extend to the bottom edge of the document.

Remove Last Image 9

Remove the last image added to the document.

Reinstate Last Image 0

Reinstate images that have previously been removed with *Remove Last Image*.

Set Edit Filter...

Allows you to set the types of images that will not be selected in cut, copy and clear operations.

Clear Edit Filter...

Clears the Edit Filter settings.

Modify Menu

Beam Notes B

Beam all notes in the selected area.

Un-Beam Notes H

Removes the beams from notes in the selected area.

Flip Beam or Tie I

Changes the beam drawing direction and the tie drawing direction in all selected beams, ties and slurs.

Transpose Free Transpose U

Transpose (by dragging) the selected notes.

Transpose Transpose Interval...

Transpose the selected notes by a specified interval.

Transpose Transpose Key...

Transpose the selected notes from one key to another.

Transpose Clean Up Accidentals

Adjusts accidentals in the selected area to remove repeated accidentals. This command should be used after transposition.

Previous Staff

Change the staff association of selected notes to the staff immediately above their current staff. Ledger lines will be drawn to the new staff.

Next Staff

Change the staff association of selected notes to the staff immediately below their current staff. Ledger lines will be drawn to the new staff.

Remove Ledgers -

Remove ledger lines from selected notes. The notes are not longer associated with any staff.

Add Ledgers =

Add ledger lines to selected notes. Each note becomes associated with the closest staff and ledger lines are drawn to that staff.

Note Modifiers Remove Modifiers M

Remove all accidentals and dots from selected notes and all dots from selected rests.

Note Modifiers Add Double Sharp

Add a double sharp (in standard position) to all selected notes.

Note Modifiers Add Sharp 3

Add a sharp (in standard position) to all selected notes.

Note Modifiers Add Natural 2

Add a natural (in standard position) to all selected notes.

Note Modifiers Add Flat 1

Add a flat (in standard position) to all selected notes.

Note Modifiers Add Double Flat

Add a double flat (in standard position) to all selected notes.

Note Modifiers Add Dot

Add a dot to all selected notes and rests.

Note Modifiers Shift Accidental Left

Shift the horizontal position of the accidentals on all selected notes to the left (so that the accidental is farther from the notehead.)

Note Modifiers Shift Accidental Right

Shift the horizontal position of the accidentals on all selected notes to the right (so that the accidental is closer to the notehead.)

Note Modifiers Add Staccato

Add a staccato mark above or below all selected notes.

Note Modifiers Add Accent A

Add an accent mark above or below all selected notes.

Note Modifiers Add Accent [

Add a tenuto mark above or below all selected notes.

Note Values Change to Quarters

Change all selected notes to quarter notes.

Note Values Change to Eighths

Change all selected notes to eighth notes.

Note Values Change to Sixteenths

Change all selected notes to sixteenth notes.

Note Values ➤ Double Note Values

Change all selected notes to double their rhythmic values.

Note Values ➤ Halve Note Values

Change all selected notes to one half their rhythmic values.

Tie Notes

Draw a tie between the first two selected notes.

Flip Notes

Flip the beams and stems of selected images so they are drawn on the other side of (i.e. above or below) the notehead.

Control Menu

Text Format...

Set the text font, font size, style and justification in the Text Format dialog box.

Alignment

Turn the Vertical Alignment bar on or off.

Ruler

Turn the On-screen Ruler on or off.

Grid

Turn the Grid on or off.

Defaults

Turn Defaults on or off.

Auto Increment

Set the Vertical Alignment Bar to move forward when a note or rest is entered.

Auto Beam

Groups notes into beams as they are entered.

Reset Auto Beam

Clear the collection of notes for beaming.

Set Auto Beam...

Set the size of the rhythmic group for auto beaming.

Set Alignment...

Set the size of the increments of the Vertical Alignment Bar.

These settings control the distance that the bar shifts when the Space and Tab keys are depressed.

Set Line Width...

Set the width of lines and the method (i.e. fill, frame, erase) of drawing rectangles and ovals.

Set Stem Clip...

Set how stems are clipped by beams when beams are added

manually to the score.

Set Rulers...

Set whether the rulers (and other measurement units) should be inches or centimeters.

Show / Hide Control Points

Show or hide the Control Points for all images. Primary Control Points are drawn in white, others in gray.

Hide / Show Text and PICT

Hide or show the text boxes and imported PICT images.

Hide / Show Print Area

Hide or show (as a gray rectangle) the area of the page that will be printed with the current page setup.

Hide / Show Text Frame

Hide or show the gray frame around text boxes.

PostScript® Settings...

Set the beam thickness, the distance between beams and the default line thickness.

Document Menu

Add Page

Add a page *after* the current page to the open document.

Delete Page

Delete the current page from the open document. (This operation cannot be undone.)

Insert Page

Add a page *before* the current page to the open document

Go To Page...

Jump to the specified page in the open document.

Change Page Size

Change the page size of the current page or the entire document.

Library Menu

New Library

Creates a new (blank) Symbol Library.

Open Library...

Allow you to select and open a Symbol Library from disk.

Save Library

Saves the open Symbol Library to disk.

Save Library As...

Saves the open Symbol Library to disk under a new name.

Windows Menu

Score Window

Brings the Score Window to the front of the screen.

Show Overview

Brings the Overview Window to the front of the screen and draws a miniature version of the page in the window.

Command List...

Displays a complete list of all NoteWriter commands.

Palette Window

Brings the Palette Window to the front of the screen.

Scroll Window

Brings the Scroll Window to the front of the screen.

Command Window

Brings the Command Window to the front of the screen.

Keyboard Window

Brings the Keyboard Window to the front of the screen.

Symbol Library

Brings the Symbol Library Window to the front of the screen.

Ext. Menu

Remove Dot

Removes dots from selected notes and rests.

Remove Accidental

Removes only the accidental from selected notes. (The *Remove Modifiers* menu item removes both accidentals and dots.)

Remove Stems

Removes the stems from notes.

Remove Heads

Removes the noteheads from selected notes (leaving only the stem.)

Change Note->diamond

Changes regular noteheads to a diamond noteheads on selected notes.

Change Tie->dotted

Changes selected ties or slurs to a dotted curves.

Change Note->small

Changes selected regular-sized notes to grace notes.

Align horizontal

Align selected images horizontally (to the first image in the selection.)

Tie Middle Up

Adjusts the arc of the tie so it is higher. In fact, the tie is transformed into a slur and the middle point is adjusted.

Tie Middle Down

Adjusts the arc of the tie so it is lower. As above, the tie is changed into a slur and the middle point is adjusted.

Move 1Pix->right

Moves selected images 1 pixel to the right.

Move 1Pix->left

Moves selected images 1 pixel to the left.

Move 1Pix->down

Moves selected images 1 pixel down.

Move 1Pix->up

Moves selected images 1 pixel up.

Line Width...

Brings up a dialog box which allows the width of selected lines and other graphics (rectangles, ovals, curves) to be altered.

Text...

Allows the characters in selected single-quote text to be altered. (Up to 8 characters are allowed in single-quote text.)

Text Size...

Allows the size of selected single-quote text to be altered.

Time Signature

Allows selected time signatures to be altered.

Change Object

Allows the ID number of selected images to be altered. *This should only be done by expert users!*

Cresc.<->Dim.

Alters the direction of selected crescendi and diminuendi.











Pencil Routines

Appendix 2 - QuickScrawl Reference 157158 *Appendix 2 - QuickScrawl Reference*













Crayon Routines

Quick Scrawl	Image	Starting Cursor Position	Affected By
			Grid
		Left Edge of Image	
		Left Edge of Image	
		Bottom of Image	Grid
		Left Edge of Image	Grid
		Below Staff Line	Defaults Grid
		4th Staff Space	Defaults Grid
		4th Staff Space	Defaults Grid
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	

Quick Scrawl	Image	Starting Cursor Position	Affected By
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	
		Left Edge of Image	
		Centre of Image	Grid
		Centre of Image	Grid
		Centre of Image	Grid

Quick Scrawl	Image	Starting Cursor Position	Affected By
		Centre of Image	Grid
		Centre of Image	Grid
		Left Edge of Image	Grid
		Left Edge of Image	Grid
		Left Edge of Image	Grid

Quill Routines

		Left Edge of Image	Defaults Grid
		Left Edge of Image	Defaults Grid
		Left Edge of Image	Defaults Grid
		Left Edge of Image	Defaults Grid
		Centre of Notehead	Defaults VA Bar Grid
		Centre of Notehead	Defaults VA Bar Grid

Appendix 3 - NoteWriter Images

Command	Image	Modifiers	Mouse Clicks
Notes			
dw	double whole note	. sh n fl	1 note head
w	whole note	. sh n fl	1 note head
h	half note	. sh n fl	2 note head--end of stem
q	quarter note	. sh n fl	2 note head--end of stem
e	eighth note (flag)	. sh n fl	2 note head--end of flag
s	sixteenth note (flag)	. sh n fl	2 note head--end of flag
ts	thirty-second note (flag)	. sh n fl	2 note head--end of flag
sft	sixty-fourth note (flag)	. sh n fl	2 note head--end of flag
q1	notehead (no stem)	. sh n fl	1 note head
gw	grace whole note	. sh n fl	1 note head
gh	grace half note	. sh n fl	2 note head--end of stem
g	grace quarter note	. sh n fl	2 note head--end of stem
G	grace quarter note (large)	. sh n fl	2 note head--end of stem
ge	grace eighth note (flag)	. sh n fl	2 note head--end of flag
gs	grace sixteenth note (flag)	. sh n fl	2 note head--end of flag
gt	grace thirty-second note (flag)	. sh n fl	2 note head--end of flag
dia	diamond (harmonic)	. sh n fl	2 note head--end of stem
sdia	solid diamond	. sh n fl	2 note head--end of stem
+	x-note	. sh n fl	2 note head--end of stem
qq	quarter note (fixed stem)	. sh n fl	2 note head--end of stem
hh	half note (fixed stem)	. sh n fl	2 note head--end of stem
gf	grace note (8th flag)		1 note head
gfd	grace note (16th flag)		1 note head
gft	grace note (32nd flag)		1 note head
gfs	grace note w/ slash (8th flag)		1 note head
gfds	grace note w/ slash (16th flag)		1 note head
gfts	grace note w/ slash (32nd flag)		1 note head
g(grace note head in brackets		1 note head
sm	stem		2 top--bottom of stem
Flags			
sflag	single flag		2 base--top of flag
dflag	double flag		2 base--top of flag
tflag	triple flag		2 base--top of flag
qflag	quadruple flag		2 base--top of flag
Rests			
rw	whole rest	.	1 2nd staff line
rh	half rest (dotted half)	.	1 centre staff line
rq	quarter rest	.	1 centre staff line
re	eighth rest	.	1 centre staff line
rs	sixteenth rest	.	1 centre staff line
rts	thirty-second rest	.	1 centre staff line
rsf	sixty-fourth rest	.	1 centre staff line
rw-	whole rest with staff line	.	1 centred
rh-	half rest with staff line	.	1 centred

Clefs			
tc	treble clef		1 centre staff line
ac	alto clef		1 centre staff line
tnc	tenor clef		1 centre staff line
bc	bass clef		1 centre staff line
!tc	small treble clef		1 centre staff line
!ac	small alto clef		1 centre staff line
!tnc	small tenor clef		1 centre staff line
!bc	small bass clef		1 centre staff line
Accidentals			
dsh	double sharp		1 centred
sh	sharp		1 centred
n	natural		1 centred
fl	flat		1 centred
dfl	double flat		1 centred
fl1	1/4 flat		1 centred
sh1	1/4 sharp		1 centred
sh3	3/4 sharp		1 centred
!dsh	3/4-size double sharp		1 centred
!sh	3/4-size sharp		1 centred
!n	3/4-size natural		1 centred
!fl	3/4-size flat		1 centred
!dfl	3/4-size double flat		1 centred
gds	grace note double sharp		1 centred
gsh	grace note sharp		1 centred
gn	grace note natural		1 centred
gfl	grace note flat		1 centred
gdf	grace note double flat		1 centred
.	(...) dot (or multiple dots)		1 first dot centred
Beams			
b	beams (straight)	# . ,	2 start--end
a	beams (angled)	# . ,	2 start--end
gb	grace beams (straight)	# . ,	2 start--end
ga	grace beams (angled)	# . ,	2 start--end
bb	beams (below notes)	# . ,	2 start--end
aa	angled beams (below)	# . ,	2 start--end
gbb	grace beams (below)	# . ,	2 start--end
gaa	angled gr. beams (below)	# . ,	2 start--end
sb	single beam (straight)		2 start--end
sa	single angled beam		2 start--end
Barlines			
bl	barline		1 top staff line
dbl	double barline		1 top staff line
.	repeat beginning		1 top staff line
.	repeat ending		1 top staff line
&bl	global barline (all systems)		1 horizontal position
&dbl	global double barline (all staves)		1 horizontal position

& . global repeat beginning (all staves)	1	horizontal position
&. global repeat ending (all staves)	1	horizontal position

Ledger lines

l ledger lines up	#	1	top staff line
ld ledger lines down	#	1	bottom staff line

Ties and Slurs

slur slur -- over / under notes	3	start--top of arc--end
tie tie -- over / under notes	3	start--direction--end
cur curve -- over / under notes	3	start--top of arc--end

Dynamic Markings

f forte (f)	1	centred
ff fortissimo (ff)	1	first letter centred
fff triple forte (fff)	1	first letter centred
ffff quadruple forte (ffff)	1	first letter centred
fp forte piano (fp)	1	first letter centred
mf mezzo forte (mf)	1	first letter centred
mp mezzo piano (mp)	1	first letter centred
p piano (p)	1	centred
pp pianissimo (pp)	1	first letter centred
ppp triple piano (ppp)	1	first letter centred
pppp quadruple piano (pppp)	1	first letter centred
sf sforzando (sf)	1	first letter centred
sfz sforzando (sfz)	1	first letter centred
< hairpin (cres. or decres.)	2	point--end

Time Signatures

## time signatures (e.g. 4/4)	1	centre staff line
1-9 numbers	1	first number centred
c common time	1	centre staff line
c/ cut time	1	centre staff line
&##/ global time signatures	1	horizontal position
&c global common time	1	horizontal position
&c/ global cut time	1	horizontal position

Staves

st staff	2	start, top of staff--end
!st narrow staff	2	start, top of staff--end
fst full length staff	1	top staff line

Articulation Marks

> accent (thin)	1	centred
>> accent (thick)	1	centred
— tenuto	1	centred
— . tenuto with dot below	1	centred
. — tenuto with dot above	1	centred
^ accent-point up	1	centred
^^ accent-point down	1	centred
‘ staccatissimo (above)	1	centred
“ staccatissimo (below)	1	centred

. (...) dot (or multiple dots)	1	first dot centred
ferm fermata above notes	1	centred
fermu fermata below notes	1	centred

Other Symbols

sl	slash up or down (45o)		2	start--height
\$	signa		1	centred
coda	coda sign		1	centred
oct	octave		2	start--end of line
tr	trill		2	start--end of wave
[upper triplet bracket	#	2	start--end
]	lower triplet bracket	#	2	start--end
,	comma (breath mark)		1	centred
lv	laissez vib. (lv)		1	centred
turn	turn		1	centred
mord	mordent		1	centred
o	natural harmonic (o)		1	centred
ub	up bow		1	centred
db	down bow		1	centred
/	single tremolo		1	centred
//	double tremolo		1	top tremolo is centred
///	triple tremolo		1	top tremolo is centred
ped	pedal indication		1	centred
*	pedal up sign		1	centred
arp	arpeggio indication		2	top--bottom
gtr	guitar tablature		1	centred
'....	text		1	bottom of first char.
{	piano brace		2	top--bottom
(straight brace		2	top--bottom
r#	measure number	#	1	centred
R...	rehearsal number		1	centred
ks#	sharp key signature	#	1	B-line of staff
kf#	flat key signature	#	1	B-line of staff
&ks#	global sharp key signature	#	1	B-line of staff
&kf#	global flat key signature	#	1	B-line of staff

Lines

	vertical line	#	2	top--bottom
	vertical line-broken	#	2	top--bottom
-	horizontal line	#	2	start--end
--	horizontal line-broken	#	2	start--end
\	line - any direction	#	2	start--end
x	erase horizontal line		2	start--length of erase
y	erase vertical line		2	top--length of erase
xy	erases a straight line		2	start point--end point

Other Tips

Return Key	Toggles between Insert and Select-rect modes
Shift Key	Constrains horizontal movement when drawing
Option-Shift	Constrains vertical movement when drawing

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