

GridCrafttm

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Introduction

GridCraft™ was developed to the specifications of a production weaver who creates original designs for a drawloom. Since its original development, **GridCraft™** was expanded to accommodate various types of craft designs that use grid sheets as a base upon which to work. Included in that broad definition are cross-stitch, needle point, latch hook, knitting, weaving and beading designs.

Through a series of set-up functions and *switches* the program can be customized to match the requirements of particular crafts as well as the personal preferences of the designer. A large number of design operations can be easily selected by using a variety of methods. The novice user can intuitively take advantage of the program's powerful design features, while "short cuts" are available for the more experienced **GridCraft™** users to allow fast completion of patterns.

In addition to drawing freehand, **GridCraft™** also provides a full complement of drawing functions using common geometric shapes and curves. Editing functions let you easily select sections of a pattern to be moved, copied, mirrored, scaled, or rotated. Entire drawings can be saved or, if preferred, parts of it can be saved independently. Any drawing or part of a drawing can be merged into another at any location. Viewing functions enable you to move around the drawing sheet, (which may extend beyond the size of the screen) and to work at any magnification. A variety of output options let you print your designs as color coded patterns or as numerical row and column data.

By using these various design functions to create, combine, and manipulate drawings, you will be able to create your new patterns quickly, and easily test new ideas and patterns.

Organization of Materials

GridCraft[™] has been designed so that it is friendly, and easy to use. We have also striven to make the printed materials as clear and concise as possible, without requiring that you read for a week before using the program.

Installation Instructions

Installing the program is easy and straight forward. Follow the instructions, and you will be ready to get to work immediately.

Fundamentals: What the keys and buttons do

Whether you use the mouse, cursor keys, or a combination of both, **GridCraft**[™] provides a consistent set of operating conventions.

Working Tutorials

The *tutorials* are intended to walk someone through the most important functions and options of the **GridCraft**tm program. While not totally inclusive of all functions, and, perhaps, not terribly artistic, it should provide a working knowledge of the tools a designer will need to create imaginative works of art.

GridCrafttm Menu Summary

The *Menu Summary* section of the manual will show, in highlighted style, the organization and options available in the **GridCraft**[™] program. The *Menu Summary* will present menu options in the order in which they appear in the program.

While the *summary* may not include all of the finer points and options, it will provide a nice over view of the "big picture".

When more detailed help on a function is needed, you may refer to the reference section.

Reference Section

The *reference section* will show, the capabilities of each menu and command option. It will be organized alphabetically, according to menu options in the program. The Table of Contents and Index will also help locate specific items quickly.

Appendix

The appendix will show how to set up a standard IBM compatible so that you can keep different types of *GridCraft*[™] drawings and different preferences in separate *directory* areas.

Installation Instructions

Requirements

GridCrafttm requires that your IBM/MS DOS compatible computer system have the following features:

- * 80286, 80386, 80386SX, or 80486 microprocessor
 - ▶ the program will utilize math co-processors if available, but it is not required. A co-processor will speed up the operation of the program.
- * Video Graphic Array (VGA) color adaptor
- * Microsofttm compatible mouse pointing device
- * Hard disk storage
 - ▶ The **GridCrafttm** program takes approximately 400K of disk storage. Additionally, however, each image uses additional storage space.
- * Printer
 - ▶ **GridCrafttm** is able to use printers that conform to any of the following standards:
 - Epson MX/FX/LQ
 - IBM Graphics
 - IBM Proprinter /II/XL
 - HP Laserjet II

Procedure

Make sure that you are at the "DOS Ready", **C:\>** prompt of your computer. If you normally use a menu, or shell program, such as "DOSSHELL", select "File" and "Exit" to terminate the menu program.

Note: You may also have to type

CD

and press <Enter>

to return to the root directory of the computer's hard disk.

GridCrafttm, once installed, may be accessed by any normal menu program. There are no special "tricks" in the way that it uses computer resources.

Take your distribution diskette, and place it into the appropriate disk drive.

GridCrafttm program diskettes are packaged with both 5¼" (high density) and 3 ½ (double sided, double density) disks.

If you are using 5¼ inch disks, be sure to avoid touching the exposed area of the disk.

Change the default drive

Type the letter of the drive into which you inserted the **GridCraft**[™] Installation disk. Floppy disk drives may be identified as either A: or B:. Typing the proper disk drive name, and pressing the <Enter> key will change the *default drive*. In our step by step instructions, we will illustrate the procedure using drive A:. If you choose to install from drive B:, simply substitute B: for A: in the steps.

Note: The actual keys that you press will appear in bold type. Separate keys, such as the <Enter> key will be identified within the caret (<>) markers. When you see <Enter>, press the <Enter> key, do not type the letters "Enter".

Type

A: <Enter>

Begin the Installation procedure

You will see the prompt

A:\>

Type

INSTALL <Enter>

The screen of figure i-1 will appear.

The available hard disk drives on your computer will be identified. Highlight the drive that you want to install the program on. Usually, the proper choice is **C:**.

The cursor control arrow keys on the keyboard will move the highlight bar to the available choices (including "eXit" if you would like to terminate the installation procedure).

When the proper drive is highlighted,
press the <Enter> key on the keyboard.

Select the proper directory

Programs on the hard disk normally occupy different *Directories*, or areas, on the hard disk.

The **GridCraft**[™] Installation Utility program uses the directory name, "GCRAFT" as the *default* directory, the directory name to be used unless you choose to provide another name.

You may press <Enter> to install the program into the **GCRAFT** area, or, you may type in a new directory area name if you choose.

Remember, directory names are limited to eight characters (with no spaces), and may have an extension of up to three characters that must follow a period.

Printer selection

After pressing the <Enter> key to specify the name of the directory that will contain **GridCraft**[™], the program prompts the user for printer type.

The fact that there are only three printers listed may be somewhat worrisome and misleading to novice users. In fact, the vast majority of the hundreds of printer brands use the standards established by these few printers.

If your printer brand is not listed, check your printer manual to determine its graphics compatibility. In general, most dot matrix printers (including the *IBM Graphics* printer) comply with the *Epson FX* standards. The few printers that do not comply with Epson standards usually use settings compatible with the *IBM Proprinter* series. Most laser printers comply with, or have settings to emulate *HP Laserjet II* standards.

Use the cursor control (arrow) keys on the keyboard to indicate your choice, and press the <Enter> key.

Printer port selection

Next, the program needs to know the "printer port" to which your printer connects with the computer.

In most cases, the "LPT1" parallel printer port is the proper choice. (The "LPT1" and "PRN" ports are functionally equivalent, and may be used interchangeably).

Some computers have more than one printer, and may use LPT2 or LPT3 for their graphics printer. Some laser printers are set up in the "serial" mode, and use one of the available "COM" ports.

Note: If your printer is set up as a serial printer (using one of the *COM* ports), the proper baud rate and data bit transmission protocols must be set. Usually, the "Autoexec.bat" file that runs each time you turn on your computer will be used for that purpose.

Selection confirmation

After the printer port has been selected, you will be shown a screen reflecting your choices with the question, "*Are these selections correct?*"

If the selections are correct, press <Enter> with the "Yes" bar highlighted.

If you would like an opportunity to modify any of the settings, move the highlight bar with the cursor to "No", and press <Enter>.

If you select "No", the **GridCraft**[™] Installation Utility will begin again at the "Destination Drive" prompt.

If you are not confident with making a selection at this time, you may highlight the "Cancel" option and press <Enter>.

Selecting "Cancel" will return to the A:\> prompt.

GridCraft[™] may be "re-installed" at any time if any options prove to be incorrect, or if your equipment configuration changes at a later date. Designs created with one set of settings will still be able to be retrieved, modified, and printed if your equipment settings must be changed at some time.

Automatic installation

As soon as "Yes" has been selected, a blinking message, "*Please wait while the files are installed*" appears while the files are "unpacked" and copied to the hard disk.

There will then be a message, "*The Installation is Complete!*", along with instructions on how to begin the **GridCraft**[™] program.

Following the flashing message "*Press <Enter> to exit, and have fun!*", pressing the **<Enter>** key will clear the screen, and return to the A:\> (or B:\>) prompt.

Starting the program

As the instructions indicate, there are three steps to beginning the **GridCrafttm** program. (The first step, changing the default drive back to your hard disk, will not be required during daily use).

Since we changed the default drive during installation to **A:** (or B:), we must change it back to the hard disk (usually **C:**).

To change the default drive back, type

C: <Enter>

To change directories into the area of the hard disk that hold **GridCrafttm**, type (in upper or lower case letters)

CD \GCRAFT <Enter>

(or the name of the directory you specified during the installation procedure, if different than the default values provided).

Now, you may begin the program by typing

GCRAFT <Enter>

Note: The program will check to make sure that the required equipment is present. If, for example, the computer's *mouse*, or pointing device, is not properly set up, the program will provide an appropriate message to that effect.

Fundamentals

Beginning the program

There are many different ways to set up a computer. If you have no special menu programs or "shells", and, if you used the standard installation procedure, the start up procedure is quite easy. Simply type the commands below:

CD\GCRAFT and press the **<Enter>** key.

Then, type,

GCRAFT and press the **<Enter>** key.

Notes: if you would like to separate different types of files into different directories, you may want to insert a *path* statement to the **GridCraft**[™] program in your autoexec.bat file and then use different directories available in DOS. Refer to Appendix A, or ask knowledgeable computer user for more information.

Typing the command **GCRAFT**, and pressing **<Enter>**, you will see the **GridCraft**[™] title screen. The title screen includes instructions to press any key to continue. Do so, and a screen similar to the one in figure 1-1 will appear.

Screen layout

There are four main sections to the **GridCraft™** program. The largest area is the **working area**. It consists of the grid on which designs are created.

To the left of the *working area* is the **Menu**. At first, we see that we are presented with the **Main Menu**.

Below the *Menu area* is a small **viewing window**. This view window lets you "see from a distance" what your design looks like while you are working at a more detailed magnification in the main drawing window.

The top line on the screen displays a **Status Bar** and various **Speed Buttons**. The status bar tells us the file name, the size of the grid, and the current position of the drawing pointer.

The **Speed Button** menu bar shows "quick" buttons that can be used for convenience. Current pen colors and different views, for example, can be changed by using the speed buttons.

Mouse pointer movements

GridCraft[™] requires a Microsoft[™] compatible mouse. If the program cannot detect a mouse on start-up it will exit immediately with an error message.

Drawing Pointer

When the program begins, the pointer forms a white cross (+) that appears in the middle of the drawing sheet. This is the *drawing pointer*. The drawing pointer is used in freehand drawing. The pointer can be moved around the screen by moving the mouse.

Menu Pointer

When the pointer is moved off the drawing sheet (and drawing freehand is no longer possible) it changes to an image of a spider (we call her "Charlotte", which seemed appropriate for weaving, and, we hoped, would catch any bugs in the program!). Charlotte, the *menu pointer* selects menu options.

Pick Pointer

A third type of mouse pointer commonly used is the *pick pointer*. This pointer will appear when the program is requesting that you to pick a point on the drawing sheet. The pick pointer appears as a double lined cross (⦿).

Mouse Buttons

GridCrafttm uses two buttons of a Microsofttm compatible mouse, the left and right buttons. If you are using a three-button mouse, the center button will be ignored. Most operations require a single press and release of the proper mouse button. A few operations, such as continuous freehand drawing or erasing, require you to hold the selected button down while performing the operation.

The Left Mouse Button

The left mouse button produces constructive results. It is used to draw freehand, to select menu items and *speed buttons*, and to indicate locations on the drawing sheet as requested by the program.

The Right Mouse Button

The right mouse button is used for non-constructive results such as erasing freehand or cancelling operations. Most operations can be aborted by clicking the right mouse button.

Keyboard Control

While the **GridCraft**[™] program can be operated entirely with the use of a mouse, some will find various functions to be easier to perform with the keyboard.

All menu options always have a unique capital letter shown in the menu list. Pressing that letter (with or without the shift key being depressed) selects the desired option.

Pressing the cursor control keys (the four directional arrow keys) simulates movement of the mouse, although, generally it is a slower method of movement. In some instances, however, it provides more precise placement of the pointer position than could be achieved with the mouse. When using the arrow keys, the pointer will jump a minimum of one grid square. Pressing the keys **1** to **0** before pressing the arrow keys will set the increment it jumps from one to the selected number of grid squares (1=1 and 0=10).

Pressing the **<Esc>** or **<backspace>** keys on the keyboard is interpreted in exactly the same way as the right mouse button press (for erasing and cancelling operations).

The **<Enter>** or **<space bar>** keys simulate the left mouse button.

Menu Selections

Menu selections may be made in either of two ways.

You may move the pointer to the desired option and press the left mouse button, or, you may use the keyboard to press the capital letter associated with the desired choice.

All menu choices in **GridCraft**[™] fall under the MAIN MENU. You may always return to the MAIN MENU by selecting **Go to main** from any of the sub-menus.

Working Tutorials

Lesson 1 - Getting Started *Quickly*

Beginning the program.

After typing the "magic word", **GCRAFT**, and pressing **<Enter>**, you will see the **GridCraft™** title screen. The title screen includes instructions to press any key to continue. Do so, and a screen similar to the one in figure 1-1 (shown earlier) will appear.

Screen layout

There are four main sections to the **GridCraft**tm program. The largest area is the **working area**. It consists of the grid on which you will construct your designs. On it, you will see a cross-hair pointer that follows any movement you make with your mouse inside the grid. To begin with, the program supplies a grid of 200 rows by 100 columns. *Rows* are considered to run horizontally, while *columns* run vertical (up and down).

The **working area** of a grids may be changed to any size or shape, within the limits imposed by your computer's memory. A standard 640K RAM configuration can work with grid sizes approximately 300 x 350. Your preferences may be set and saved, or may be constantly modified according to your needs. But, for now, for the purpose of the tutorial, we will press on using 200 x 100.

Freehand drawing and mouse control

Move your mouse pointer. You see the pointer move. Move the pointer toward the left center of the working area. You may want to move it somewhere near the coordinates of row 60, column 40, as reflected in the top right-hand corner status line. Remember, mouse control is excellent for large, quick movements, but the cursor control arrow keys are best for precise movements.

Column and row numbering begin in the lower left-hand corner. If your craft works more conveniently by numbering columns from right to left, the direction of numbering may be changed by selecting **Switches** from the MAIN MENU, and then **Number dir.**

*(For convenience in positioning, do not change the **Numbering direction** while using this tutorial.)*

Now, press and hold down the left mouse button, while moving the pointer in a horizontal line toward the right (move slowly at first, until you get used to the program). Try making a straight, horizontal line that extends to approximately the 65th column.

► Don't worry if it seems difficult to draw a straight line. You will learn to use the straight line feature of **D**raw soon. And, we will also learn how to "zoom in" on an area so that precision movements are quite easy.

For now, we expect that you will create a line less than perfectly straight.

A blue line appears as you move the mouse pointer. Let go of the left mouse button when you have completed the line. The right mouse button, when held down and dragged across the line will erase blocks that it makes contact with. Try it! Make your line slightly shorter, say to the 60th column, by pressing the right mouse button, thereby wiping out some of the existing line.

| |
|---|
| In general, the left mouse button selects an option while the right button cancels, or de-selects, an action. |
|---|

Screen layout

The Viewing Window

At the bottom left corner of the screen, you will notice a section of the screen with a blue line on a white background. This section, the **Viewing Window**, shows a snapshot of how the image looks in relation to the entire grid (not just the portion you may be able to see on the screen at any one time).

The Menu

Just above the *Viewing window* is the **menu**. At first, we see that we are presented with the **MAIN MENU**. Menu items may be selected in one of two ways.

► You may use the mouse to select menu items. Move the mouse across the surface of your working area until the pointer moves into the menu area. You will notice that the shape of the pointer changes from the hair-line cross into an itsy-bitsy spider (we call her Charlotte). Since we want to use the line feature of **Draw**, we move the pointer so that the **Draw** option is highlighted within a box, and press the left mouse button (the select button). Instantly the Menu changes from MAIN to DRAW. The last item in the DRAW menu, "**G**o to main" will return us to the MAIN MENU. Try it, now, please. Good! It works.

- ▶ A second way to select menu items is to press the capital letter associated with the menu choice. For example, if you press the "D" key while the MAIN MENU is displayed, the DRAW MENU will appear (do so, please). [Note: Menu options have been arranged so that no two options ever use the same letter.]

Menu selections may be made by (1) moving the pointer to the desired option and pressing the left mouse button, or (2) by using the keyboard to press the capitalized letter associated with the desired choice. It does not matter to **GridCraft**[™] whether you press a capital or lower case letter on your keyboard.

This is not too complicated. Remember that all of the menu choices in the program are connected to the MAIN MENU, and that you may always return to the MAIN MENU by selecting "**G**o to main" from any of the sub-menus. Figure 1-2 illustrates all of the menu options within the **GridCraft**[™] program.

Menu navigation

Draw

Now, where are we? We should be in the **DRAW** menu. If you are, fine. If not, you now have the skills to get there.

We have decided that we want help in drawing a straight line, (without having to have hands as steady as those of a surgeon). We are going to want to create another horizontal line that is parallel to the existing line. You guessed it! We will select "Line" to accomplish this feat.

Speed Buttons

Suppose, though, that we want the next line to be a different color than the original line.

The top line on the screen is a combination of **Status Bar** and **Speed Buttons**. The status line tells us the file name (untitled.pat for now) and the size of the grid (200 rows by 100 columns, for now). The right side of the **Status Line** indicates the current position of the pointer, with Row and Column coordinates.

Color change

The **Speed Button** menu bar consists of icons, or buttons, that can be used to conveniently make changes without having to navigate through menus. For example, to select a new color, move the pointer (Charlotte) to the block with the single large white {C} (for Color). Notice that the {C} has a rich blue background, indicating the color currently in use. With the pointer on the {C} button, press the select (left) button. A palette of sixteen colors

appears. Move the pointer to highlight another color, for example, the bright yellow color. Press the select (left) button. The {C} now has a yellow background. Now, our drawings will be created in yellow until we change it again.

► The *Speed Buttons* functions correspond to menu choices. You could have also changed the active palette color by selecting "Go to main" to get to the MAIN MENU, and then selecting **Switches**, and **Color**. However, you would have then had to "Go to main" to get to the MAIN MENU, and then returned to **Draw**.

Draw

Line

Select **Line** from the Draw menu, (by either moving Charlotte to the "Line" option and pressing the left button, or by pressing the "L" key on the keyboard). As soon as "Line" has been selected, the shape of the cross-hair pointer changes, and the status line (middle top of screen) prompts us to "*Pick the line start point*". We do that by moving the pointer to the desired spot (say row: 55, Col: 40) and then press the left, select button or the <Enter> key on the keyboard. The prompt now changes to, "*Pick the line end point*". As we move our pointer (with either the mouse or with the cursor control arrow keys on the keyboard), a fine white line moves to show the position of the line. When you are happy with the position of the line, (perhaps row: 55, Col: 60) press the left button (or <Enter> key) again, and a perfectly straight (yellow) line will appear.

The program assumes that you want to make lines until you tell it to stop. The prompt asks you to "*Pick the line start point*" (again). Lets make another parallel line, starting at row: 50, col: 40 and ending at row: 50, col: 60. Good!

Now, simply press the right mouse button, or the <Esc> key on the keyboard to quit drawing lines.

► If you are ever unhappy with the starting position of a line, you may press the right, escape button or <Esc> key to escape from the line creation procedure.

Ah, had we only known about line draw earlier! What shall we do with the small imperfections in the freehand line? (Surely there must be a way to control each block of the grid with exquisite control!)

View
Zoom in

GridCraft™ lets you magnify your working space as large as you need. The options we need to use are in the VIEW menu. To get there, select "**G**o to main", which will get you to the MAIN MENU, and then "**V**iew".

From the VIEW menu, select "**Z**oom in".

Note: From now on, the tutorial will simply request that you "select" a given option. According to your personal preference, you may use the mouse or keyboard method of selection.

Upon selecting "**Z**oom in", the pointer (when it is in the **working area**) changes into a top-left frame marker and the prompt states, "*Pick upper left corner of zoom area*". Use your mouse to move the frame slightly above and to the left of the top (blue) line that you created, and click the left, selection button on the mouse. The pointer changes into a bottom right frame marker. Move it below, and to the right of the bottom line (move it 10-15 blocks further to the right than is needed, in order to leave additional room for further work within the zoomed screen). When you have identified the lower right corner of the zoom box, click the left mouse button again. Wow, an enlarged grid!

You may use the "**Z**oom in" feature of the VIEW menu to zoom the display into successively more detailed displays. "**B**ase" returns the view to the beginning (base) view while "**F**ull" uses as much of the screen as necessary to display the *full* design. "**P**an" is used to pan the image design across the existing screen view.

The "**Z**oom in" *Speed Button* (available in all operations) is the fourth button from the right, and appears as double horizontal arrows (↔). The "**P**an" *Speed Button* is the third button from the right, and appears as vertical arrows (↑↓).

A summary of *Speed Button* options that affect the **view** of the design are:

- !! Redraw the design
View/Redraw
- ↔ Zoom in
View/Zoom in
- ↕ Pan the view within the drawing window
View/Pan
- % Change the view by any factor
View/faCtor
- ☀ show a full view of the design
View/Full

The faCtor option (whether accessed from the VIEW menu with the mouse, with <C> from the keyboard, or by the 2nd from the right *Speed Button* "%") also changes the **view** of the working grid. A factor of 2 will double the block size within the view, while .5 will "zoom out" by making the visible block size half of the previous setting.

Editing in Zoom

Since you currently have the yellow color selected (and hopefully, are in the zoomed view), move the pointer, and press the left mouse button to fill in the four blocks on the left between the two yellow lines (column: 40, rows: 51 through 54) as seen in figure 1-3.

Remember, the left button puts dots down; the right button erases them.

Now, move the pointer to the Speed color button on the top of the screen (the yellow one with the capital {C} on it) and change the selection to the original shade of royal blue. Now, you may adjust the blocks of your free hand line to make it straight by removing unwanted squares and inserted new ones (using the left mouse button to color in new blocks and the right mouse buttons to remove unwanted filled blocks).

Oh, all right, go on and play for a minute. See if you can make the blue line twice as thick as it was by holding down the left mouse button, and dragging it across the grid squares, thereby filling in the blocks. Free hand drawing in the zoomed screen certainly gives more control, but not as much control as options in the DRAW menu.

Drawing in Zoom

Line

We may still use our drawing tools within the zoomed screen. First, let's change our active color to yellow once again (using the {C} speed button). Now, let's use the MENU to select "Go to main", "Draw" and "Line". Move the double cross-hair pointer one block to the right of the upper yellow line (row 55 column 61), and press the left mouse button. Now, move the pointer straight down (to row 50, column 61). With the thin line indicating the proper positioning for the new line, press the left button a second time to create a straight line, thereby closing the rectangle.

Remember, you must now press the right mouse button, or <Esc> to terminate the Line draw operation.

Drawing in Zoom
Rectangle

Now, still within the DRAW menu, change the active color to red (see how you can be weaned from so many step-by-step instructions already?). The {C} on the speed button bar displays the selected red color.

Select "Rectangle" from the DRAW Menu by pressing <R> on the keyboard, or by highlighting it with the mouse and pressing the left mouse button. The prompt tells us, "*Pick the first corner*". Move the double pointer immediately (one block) to the right of the vertical yellow line you just created (row 55, col 62), and press the left, select button, or press <Enter> on the keyboard. In response to the second prompt, "*Pick the second corner*", move the pointer down and to the right to create a rectangle to the right of the yellow rectangle (to row 50 col 66). Notice how a small line shows where the rectangle will appear. Press the select button, or the <Enter> key a second time to complete the (red) rectangle.

► Remember, you have to press the right mouse button, or <Esc> key to terminate the process of creating new rectangles once the process has begun.

Drawing in Zoom
Fill

Enclosed areas may be filled with your choice of solid colors. However, one should **be careful** when selecting the "Fill" option. If you try to fill an area that is not completely enclosed, the "paint" of the fill operation can spill out beyond the area you wanted to fill, and paint the entire screen.

In general, it is a wise practice to save designs in progress before using options like "Fill", "Delete", or "Resize".

For now, we will throw caution to the wind (for a couple of brief moments), and fill our new rectangle. We would suggest that you select of a different shade of red as the active color. Then, from the DRAW menu, select, "Fill".

When the prompt states, "*Pick the interior of the area to fill*", move the pointer within the new, small red rectangle, and press the left, select mouse button. Voilà! A rectangle filled with the selected color!

Press the right mouse button, or <Esc> to terminate the fill option.

Saving Designs

File

save **As**

We have made some progress in our design. We should save it in progress. In general, every time you do some work that you are proud of, take a few seconds to save it. It doesn't cost you anything to save your work, but no amount of money can get back a design that was not saved.

From the DRAW menu where we are in the tutorial, we must select "**G**o to main" to return to the MAIN MENU, and then select "**F**ile".

When we see the FILE menu, we notice on the top line that the file name of this design is called, "untitled.pat" (for untitled pattern). The first time we save this design, we should also give it a memorable name. To do so, select "save **A**s", and we will be prompted for a file name, "*Enter drawing name:*".

► To select "save **A**s" from the keyboard, press the <**A**> key. Each menu selection has a unique letter associated with it. In the FILE Menu, <**S**> is used to "**S**ave drawing" (using the file name already in use by the design).

The main part of a file name may have up to eight characters (letters). Additionally, a file name may be followed by a period (.) - and an "extension" of three characters. No spaces may be used in a file name, or after the period in the extension. For example, when we save this design, using the "save As" option, in response to the "*Enter drawing name:*" prompt, we will type **FIRST** and press <**Enter**>, as illustrated in figure 1-4.

As soon as the computer has saved the file, the file name, and grid size appears in the top left-hand corner of the status line.

From this point onward, it will only be necessary to select "**S**ave draw" from the FILE menu. Progressive changes will be saved using the same file name. You may, however, use "save **A**s" if you want to assign the design separate names, thereby saving different versions of your work.

Views

Pan
Base

Now that we have saved our work, we feel more confident. If the power were to go off, for example, we would be able to select **File** from the MAIN MENU, and select "Load draw" to get it back to the state it was in when last saved.

Let us go back to the MAIN MENU, and then select "**View**" once again.

Sometimes, especially when using the "Zoom in" feature, we need to be able to move the image around on the screen. That is the purpose of "**Pan**".

Select "**Pan**" from the View Menu, (we could have also used the Speed Button {↕}) and the prompt message will state, "*Pick the reference point*". Move the pointer to a reference point, say inside the filled red rectangle, and press the left, select button on the mouse. The prompt now states, "*Pick the new location for reference*". Move the pointer to the left, about twelve blocks, and up about 4 blocks (to approximately row: 57 col: 52). When you press the left mouse button again, the image will be panned within the work sheet. The reference point will have moved to its new location in the grid.

We no longer want to work in a zoomed view, so we may select "**Base**". The image, based on the appearance of our beginning (base) view appears.

grid **L**ines
on/off

Perhaps we would like to see what our design looks like without the grid marks. Under the SWITCH menu, there is an option for "grid Lines". However, it is more convenient to use the *Speed Button*, {#}, to the left of the {C} color button (yes, the one that looks like a grid) to perform the same function. Move Charlotte to the "Grid" speed button, and click the left mouse button. The grid disappears. Pressing it a second time makes the grid re-appear. Let's leave it off, for now.

set-Up

Big bckgnd

Sml bckgnd

Art and design are very personal processes. Personal preferences are critical to effective work. **GridCraft**[™] allows you a wide choice of personal preferences.

Suppose, for example, that you would rather work on a black background than a white background. You will need to select a "set-**Up**" function.

First, select "**G**o to main" to come back to the MAIN MENU, and select "set-**Up**".

► Notice that the keyboard letter to press to get to the set-**Up** menu is <**U**>, rather than <**S**>. <**S**> on the MAIN MENU is reserved for **S**witches.

At the SETUP menu, select **B**ig bckgnd (for "Big background"). A palette of sixteen colors appears. Move your pointer to the top left black tile, and press the select mouse button. Too dark? Try subtle grey, or any of the other available colors.

| |
|--|
| All SETUP changes are only temporary changes unless the " K eeP setup" option is used. K eeP setup creates a configuration in the current directory. |
|--|

The "**Sml bckgnd**" (for "Small background") option changes the background color of your *Viewing Window* display.

set-Up
Mod colors

GridCraft™ not only lets you select from among 16 colors, it lets you modify each of those colors almost infinitely.

Still in the SETUP Menu, select Mod colors. The "Modify Colors" menu of figure 1-5 appears. There are 16 colors on top, and three control panels, one each for red, green, and blue below.

Move the pointer, and click on the top left black tile. You see that each of the control panels is all the way to the left, that there is no color in black. Move your pointer to the control bar inside the B (Blue) area. Press the left button, hold it down, and *drag* it to the right. You notice that progressively more, and brighter blue appears as you move the bar to the right.

Playing with the red and green bars allows you almost infinite control over the shade, intensity and hue of your colors. Selecting the "Ok!" box with the mouse button will cause the program to use the new palette for this design. Selecting "Cancel" would cancel the changes, and return to the previous settings.

When you have (temporarily) adjusted your palette, indicate your satisfaction by pressing the left mouse button while the pointer is in the "OK!" box.

Edit

list c**L**ear

list **A**dd

The EDIT Menu provide a myriad of options for duplicating, moving, rotating and deleting designs. The key to effective use of "Edit" features is to learn to utilize the available list features.

In order to get to the EDIT Menu from the SETUP Menu, simply select "Go to main" and then select "Edit".

In our first, simple application, we will use Edit to delete our initial (blue) line in our design. The second tutorial section will show more creative, and visually interesting applications.

As a precaution, experienced users of **GridCraft**[™], particularly professional weavers, suggest that the new user routinely select "list cLear" to make sure that there is nothing from a previous operation still in the list's memory. Therefore, a quick "list cLear" is in order.

Now, let us select "list Add". This step will identify what section of the design is to be manipulated.

Selecting "list Add" to bring the prompt, "*Pick the first corner of the area to include*". Move your pointer above and to the left of your original (now double thick) blue line, and press the left mouse button. The next prompt informs you to, "*Pick the opposite corner of the area to include*". As you drag the pointer along, a thin rectangle surrounds the desired image. Be sure to capture the line without including any of the yellow or red images below it. When you have done so, press the left mouse button a second time.

The program will show the area you marked (using the color from your palette on the bottom row, 2nd color from the left). If the shaded area is correct, press the left button; if it is incorrect, press the right, escape button to clear the list, and start over.

Now that the area is marked, and added to the *edit list*, several options are available. Before we delete the line, let's see how the program will copy it for us.

Edit
Copy

Select "**C**opy" from the EDIT Menu. We are immediately asked, "*How many copies?*" That is because the **S**witch/**c**Opies switch (represented by two small circles - the fifth speed button from the left - {°}) is set to multiple copies. If you always want to copy one at a time, you would click the speed button so that only one circle is visible.

* For the purpose of this tutorial, be sure to leave the "**c**Opies" switch to multiple copies, as indicated by two small circles displayed in the *Speed Button* display.

We will respond to the "*Number of copies*" prompt with "3" to obtain three copies of the original thick line. We type "3" on the keyboard, and press the <Enter> key.

The program prompt request that we, "*Pick the COPY reference point*". We will pick a point in the working area, for example, the top left edge of the line by moving the pointer there and pressing the select button on the mouse.

We are then prompted, "*Pick the new location for reference*". We move the pointer to a new location, perhaps creating a diagonal line slightly above and to the right of the original corner, and then press the left mouse button.

Immediately, three shaded thick lines appear, along with the cryptic prompting message, "*right button = ABORT left button = OK!*". If the lines are positioned properly, press the left, select button, or the <Enter> key; if not, press the right mouse button or the <esc> key, and select "**C**opy" again. (The *Edit list* will still contain an image of the desired line).

When you press the left, select button to complete the copy operation, the image, in its original color, will be duplicated three times on screen.

Copied images may extend beyond the size available in the **working area**. Using the **V**iew option, **F**ull, (or the *speed button* {⊙}) will adjust the view to include the full image, while **B**ase will return the view to the beginning, or base, view.

Edit
List sHow

Now, our lesson in progress shows a total of four thick, blue lines in addition to our image of a lighted cigarette (oh, that's what the yellow and red rectangles are turning out to be!)

The active item in the *edit list* is still the original thick line, not all four lines. Selecting "List sHow" confirms that only one line is in the *edit list*. Clicking either mouse button, or the <Esc> key will end the list display.

Edit

cOlor

Let us go up top, to the color {C} speed button, and select another color, such as a lavender, or green. The background around the {C} indicates the active color.

Now, in the EDIT menu, select "cOlor". The shading confirms the area about to be affected. Pressing the left mouse button or the <Enter> key changes the color of the original line to the newly chosen color.

Edit

roTate

When you begin to perform sophisticated editing functions, you may choose to turn your grid display back on, and perhaps, zoom in on the view.

Suppose that we would like the original line to become a vertical line, rather than horizontal. We would select "roTate", and be prompted to, "*Pick the pivot point*".

Imagine the "*pivot point*" as the one spot that will stay "nailed" to the grid. Pick the lower left block of the newly colored line edge by moving the pointer there and then pressing the left mouse button.

Next, we are prompted to "*Pick the first ROTATE reference point*". We will move the pointer to the block on the lower right edge of the thick line, and press the select button again. Now, we are told to, "*Pick the second ROTATE reference point*".

A line segment follows our pointer from the original "pivot point". We move it vertically above the pivot point, forming a straight line, and press the mouse select button, or the <Enter> key. A shaded image is shown where the new image will appear.

► Since we have the "Tracking" switch on (see below), the shaded line will move if we move the mouse.

Press the left mouse button or <Enter> to "OK" the procedure when the shaded image is in the correct location.

► Since our "cOpies" switch is set to multiple copies (as indicated by the two small circles in the sixth speed button), the "roTate" operation leaves the original image as the new image is rotated.

A quick check of "list sHow" confirms that it is still only the first horizontal line that was added to the *edit list* that remains in the list. A mouse button or <esc> terminates the display of the *edit list*. For practice and for clarification of what remains in the edit list, go to the color speed button, {C}, select a new color, and then select "cOlor" from the EDIT Menu. Confirm the color change with <Enter> or the left mouse button, and the only item still in the *edit list* changes to the newly selected color.

Let's see what the effect of roTate will be when the "cOpies" switch is set to a single copy.

Move the pointer to the sixth speed button on the top of the screen, {°}, and click it so that there is only one tiny circle, {°} showing. Switch/cOpies has now be set to "single".

Press the EDIT menu option "list sHow" to be sure about what is in our *edit list*. It is still, of course, the newly colored horizontal line.

Select "roTate" again. When prompted to "*Pick the pivot point*", select the lower right-hand corner of the line. In response to the "*Pick the first ROTATE reference point*" prompt, click the mouse on the lower left corner of the same horizontal line. Finally, when asked to "*Pick the second ROTATE reference point*", move the pointer so that the thin indicator is perfectly straight, and then press the select (left) mouse button (or the <Enter> key. Press the left mouse button, or <Enter> key again, and you will see that a vertical colored line has appeared,

while the original, horizontal line has disappeared (see figure 1-6).

Notice that the new vertical line, and its color, have "overwritten" the colors on the existing blue, horizontal lines.

When using roTate in the EDIT menu, having the cOpies switch set to single copies makes the original copy disappear, while multiple copy settings result in a rotated image AND the original image.

Sometimes, in editing, it is not easy to remember which is the image in the current *edit list*. Use the menu selection "list sHow" to see which is the active image in the list. (In this case, it is the second vertical line, with the new color, that was just rotated.)

If we would like to get rid of the line that is in the *edit list*, simply select "Delete" from the EDIT Menu. The area to be deleted (the same area in the list) is shown in its highlight color. Pressing the left mouse button or <Enter> confirms that you want to delete it.

Our tutorial, as described, deleted the *edit list* line, and left gaps in the three copied lines. Again, remember to save your designs frequently to avoid unwanted changes. For practice, use the free hand drawing method to replace the missing blocks (remember to change the active pen color back to blue!).

Edit

- Changing the list

- Deleting a wide area

Now, through playing around, we have four lines to delete, rather than just one.

In this tutorial, one objective is to make the user very familiar with navigation through the menu structure. We will navigate back to the VIEW Menu, and then return to the EDIT Menu in order to change the view back to the "**B**ase" view (the view in use when we started the design).

Select "**G**o to main" to get to the MAIN MENU, then choose "**V**iew" and "**B**ase". The design is now oriented so that Row:1, Col: 1 is again in the lower left corner of the screen.

Now, we will again utilize the menu system and return to the EDIT menu. Simply select "**G**o to main" and "**E**dit".

Since we deleted the image that was in our *edit list*, any request to "list s**H**ow" would bring the message, *There is no list of grid squares to edit!* Clicking on the "Continue" box will continue the program.

As a safety precaution, as coached by professional designers, we will select "list c**L**ear" as a habit to make sure that our *edit list* is completely clear. Then, we will select "list **A**dd".

In response to the prompts to "*Pick the first corner*", and "*Pick the opposite corner of the area to include*", we will surround the area of the four lines (but not the yellow and red "cigarette") with the pointing box, and press the left mouse button.

The display will show the area marked for the list, and we press the left mouse button to confirm. Now, we simply select "**D**elete" from the EDIT Menu and click the left mouse button or press <Enter> to confirm the deletion all of the (unwanted) lines in the design.

It is a good practice to save your file before deleting or manipulating images. **GridCraft**[™] does not contain a facility for "un-deleting" images. However, if you save your work and then get an unwanted result, you may quickly and easily retrieve the work at the point at which it was last saved by using the menu choices "**F**ile" and "**L**oad draw".

**Draw
Circle**

All that is left on our screen now is a lonely image of a cigarette. To complete a "No smoking" sign, we will need a couple of circles, some lines, a little fill, and some text.

Go back to the MAIN MENU, and into the "Draw" Menu. First, select the color that you want (using the {C} speed button). Whatever is the active pen color is the color that will be used in drawing new images.

► To turn the grid lines on or off in the *Working area*, use the speed button {#}. They should be on for the purposes of the tutorial.

Now, select "Circle". You will be prompted to, "*Pick the circle center point*".

Move the pointer to the center of the cigarette image (approximately row: 53 Col: 53), and press the select button on the mouse (or the <Enter> key on the keyboard). Now the prompt states, "*Pick a point on the circle*" and, as you move the mouse or the arrow keys, a thin outline of a circle moves with it. Move the pointer until the circle extends completely beyond the image of the cigarette. Then press the left mouse button or <Enter> key again.

Again, there is a prompt to, "Pick the circle center point". In DRAW, the program assumes that the selected operation, such as drawing circles, will continue until the <Esc> or right mouse button is pressed.

Move back to the same starting point (row: 53, col: 53), and press <Enter> or the left mouse button to begin a new circle. Move this one a little farther out than the last circle. Perhaps row: 79, col:53 would be a position that would be appropriate. (At least one grid square of space is required so that the **Fill** option will work). Press the select button on the mouse, or <Enter>.

Remember, the program must fit a circle into square (or rectangular) grid patterns. The denser the grid pattern, the more perfect the circles (and arcs, ellipses, and Bezier curves) will appear.

Draw
Fill

Escape from the circle procedure by pressing the right mouse button or the <Esc> key. Next, we will want to fill in the area between the two circles. Remember to change your color, if you so desire. Next, select "Fill" from the Menu. When the program prompts, "*Pick the interior of the area to fill*", move the pointer to a position between the two circles, and press the left mouse button, or the <Enter> key. The desired area will be filled with the selected color.

► If you would prefer that a different fill color had been used, simply repeat the "Fill" procedure after selected a different color.

Now, for practice, <Esc>, change the active pen color to white, and *Fill* the main part of the cigarette with white. Press <Esc> or press the right mouse button when it has been filled.

File

Save draw

Since we have made significant progress on our design, let us take a moment to save it before returning to modify it still further.

Select "**G**o to main", "**F**ile", and "**S**ave draw".

When you select "**S**ave drawing", the **GridCraft**[™] program assumes that you want to use the same file name already given to the design. In this case, it assumes that the file name will be "FIRST", the name given to it earlier. The program will display a warning, "*File already exists!*". Since the computer's hard disk storage device can only have one file in a given directory with a particular file name, it double checks to make sure that you want to replace the old design with the "new and improved" design. Click on the "Ok" message to confirm that it is "OK".

► If you are embarking upon an experimental phase of design development, and are not sure that you want to replace a file, you could "*Cancel*" the "**S**ave draw" procedure. Instead of "**S**ave draw", select "save **A**s" which will prompt for a new drawing file name, while leaving the current design on the disk in the manner that it was last saved.

Practice, practice, practice!

Using what you already know about Menu navigation, **L**ines and **F**ill, create a "no smoking" symbol similar to the one in figure 1-7.

- ▶ Hints: It will be easier to do detailed work if you use the "Full" view option (available with the {☀} speed button on the extreme right, the one that looks like a snowflake). Return to the DRAW Menu, (check the active pen color), draw a couple of diagonal **L**ines, and "**F**ill" them.

When you succeed, be sure to "**G**o to main" to return to the MAIN MENU, select "**F**ile" and then "**s**ave **A**s". When prompted to, "*Enter drawing name*", respond by typing *SMOKING*, and press <Enter>.

* In this tutorial, we have purposely saved this file with a new file name, "**SMOKING**" in addition to the original file called "**FIRST**". You may later want to practice by duplicating these steps on your own, using the file "FIRST", after learning to use the **F**ile, **L**oad draw commands.

Draw

Text

GridCraft[™] comes complete with access to capital and lower case letters. Now, it is easy to add monograms and other text into your craft work.

Each letter of text is normally composed in an 8 x 8 grid of squares. The proportional size of text within a design will therefore vary with the size of the working grid. If you need to enlarge or reduce the size of lettering in your design, **GridCraft**[™] supplies a program, GCRESIZE.EXE, to make such modifications possible. For instructions on how to use GCRESIZE, see lesson 3 below.

Suppose that we want to add the message, in red, "No Smoking" to our design. We decide that the word, "No" should appear above the graphic, and the word, "Smoking" should appear below it.

The first step will be to get ourselves enough room to work. There are a variety of ways that the view could be changed, including going to the VIEW Menu and selecting "**B**ase" to return to the beginning view of the design.

► A quick and convenient way of changing the view of the *Working area* is to use the speed button {%}. Click on it (the second from the right). You will be presented with the prompt, "*Scale Factor*". Type ".5" and <Enter> to make the grid blocks half as large as they were previously.

The next steps will be to set the proper pen color (using the {C} speed button) and then select **T**ext from the DRAW menu. When we do so, the program prompts, "*Pick the text start location...*".

Align the cross-hair pointer to a position that looks approximately centered above the graphic (the bottom left corner of the first letter will appear just above and to the right of the center of the cross). In our tutorial, the proper position will be approximately row 85, column 49.

► Do not be overly concerned about the position of text. It will, of course, be easy enough to move the text using the program's editing feature. Try to avoid placing the text so that it "overwrites" other parts of the design.

As soon as the left, select button of the mouse has been pressed, there will be a block prompting, "*Enter the text:*". We shall type in the word, "No", and press <Enter>. As if by magic, the word "No" appears in our design. Drat! It is not perfectly centered. Do not worry. We can move our text graphic just as we would move any graphic.

Edit

Move

In order to move text (or any graphic image), we must first get to the EDIT menu. We will select "**G**o to main" and "**E**dit".

Since we only want to modify the centering position of the word "No", we shall first select "list c**L**ear" to make sure that no other parts of the image are effected. Then, we shall select "list **A**dd", and mark opposite corners of the text word, "No" as described above. After seeing the affected area in shaded display, we confirm with <Enter> or the left mouse button, and then select "**M**ove".

The first prompt after selecting "**M**ove" is, "*Pick the MOVE reference point*". That point can be any place within the image. For convenience, I'll choose the bottom left corner, row 85, col 49, and press the select button, or <Enter>. The prompt changes to "*Pick the new location for reference*".

You will notice as you move the pointer that an indicator line displays whether you are moving the image in a straight line or at an angle. I'll try moving it just a few squares to the left, using the arrow keys on the keyboard, to row 85, column 46.

► A shaded image is shown at the location you chose. Since tracking is on (see below), you may still position the image with the mouse or arrow keys before pressing <Enter>. The prompt indicates, "*right button = ABORT left button = OK!*"

The cursor control keys (the arrow keys on the keyboard) are excellent tools for fine movement and positioning. They will provide more precise movement than can be accomplished by using the mouse.

The word "No" is still in the *Edit list*. Further fine adjustments to it could still be made by simply choosing "**M**ove" and using the arrow keys to adjust its position. Pressing <Enter> places the text in its new position. Pressing the <Esc> key or right mouse button cancels the **M**ove operation.

Now, go back to the DRAW menu (by selecting "**G**o to main" and **D**raw). Then select **T**ext (red is still the selected active color). Row 15, column 29 seems about right for positioning.

► In calculating text positions, remember that eight blocks will be used to place the text, and that a ninth block is used in placement. In general, it is safer to give yourself more than the estimated room, and then **M**ove the text if necessary.

Answering "Smoking" to the "*Text prompt*" results in Figure 1-8 and shows how the image will appear.

File

Save draw

Since significant enhancements were made to the file in progress, "SMOKING", should be saved again.

"Go to main", select "File", and "Save draw".

- ▶ When you choose to save a design with the "Save draw" command, the program assumes that you want to give it the name shown in the upper left corner of the status line (i.e. SMOKING).

If a design has already been saved using the given file name (as it will have if you saved an earlier version of it), the program will warn, "*File already exists!*". The options of "**OK**" or "**Cancel**" are given. Selecting "**OK**" replaces the old version of the design with the new, improved version.

Print
Pattern gr
[Pattern graphic]

There are a number of different printing options. From any sub-menu, such as the FILE menu, select "**G**o to main" and then "**P**rint" in order to print your design to a printer.

► As computer aided design becomes more common place in graphic arts and crafts, more and more people will share their designs electronically, via disk or by modem. The first speed button, showing a capital "P", indicates that the print job will be sent to a printer. The other option is to "print" a design to a disk.

Most people will want to print their design to a printer using legends to indicate the color coding. The proper choice for that method is "**P**attern gr", meaning "**P**attern graphic" (there being not enough room in the menu area for the whole word).

Be sure that your printer is properly connected to the computer, and turned on (if it isn't, the program will tell you, "*Printer not ready*", and ask for you to "**C**ontinue").

Before printing, it is convenient to move the pointer around in the *Working Grid* to see how far the borders of the design extend. In this case, all of the design falls within the 10th and 100th rows. Knowing this fact can save the printing of empty grid spaces.

After selecting "**P**attern gr", you will be prompted to supply answers to the prompts, "*Starting at row...*" and "*Ending at row...*". According to your preferences, you could enter "10" and "100", or "1" and "200". A reduced image of the resulting print out can be seen in figure 1-9.

Fine tuning

An inspection of the design in progress shows that the image is not exactly centered horizontally. This would be most evident if you returned to the VIEW Menu and selected "**B**ase". Moving the pointer to the sides of the circle shows that there are only about 21 squares to the right of the circle, and 26 to the left. That can be corrected by judicious use of editing facilities. Moving the entire image about three blocks to the left will correct the situation.

Select "**G**o to main" and "**E**dit". Choose "list c**L**ear" and then "list **A**dd". Indicate opposite corners to include the entire design.

► Do not try to be too fine in pointing out a large area. Overshoot the area, since only lighted squares will be affected.

The shaded area should show the entire design. Click the mouse button, or press <Enter> to confirm the display.

Select **M**ove from the EDIT menu. The prompt states, "*Pick the MOVE reference point*". Place the pointer on any convenient reference point, and press the left mouse button, or press <Enter>.

At the next prompt, "*Pick the new location for reference*", we know that we need the image move 3 blocks to the left. Simple press the <left arrow> key on the keyboard three times.

► The normal, or default, value for moving blocks with the cursor control (arrow) keys is one block per press of the key. If you press the <5> key first, and then press the left arrow key, the new location would jump five places to the left.

Press the <Enter> key (or left mouse button) to reposition the image, and press it again to confirm the new location of the image.

Fine tuning

Adjusting text

Entering text, at times, can be a little inconvenient. There is the built-in difficulty that some letters, like "S", "o", and "g" are wide letters, and other letters, such as "i" and "l" are thin letters. Spacing may need to be adjusted, especially for perfectionists.

The method of correcting the spacing is the same method used to move the entire image, as described above. However, in this case, we will "list cLear" and then "list Add" only the "ing" of the word, "Smoking".

After selecting "**M**ove", and picking a reference point, it would be wise to press the <1> to set the default moving distance back to one (if you experimented with other numbers earlier).

After moving the "ing" closer to the "k", check to see if the whole word is perfectly centered. If it is not, move the whole word to the left or to the right.

Print

Row/col

Hader gr

Block grid

Figure 1-10 shows an identifying "Header graphic", followed by a figure 1-11, a print out of row and column data, such as might be used by a drawloom weaver.

A **B**lock graphic, shown in figure 1-12 highlights all colored blocks, without detail as to color differentiation.

Lesson 2 - Artistic Interlude

File
New

If there is anything on your grid, and you want to start with a "clean slate", the procedure (from the MAIN MENU) is to select "File" and then "New".

The program will prompt for you to, "*Enter drawing name:*". Type in the name, and press <Enter>.

► Remember, file names can have up to eight characters (no spaces, please), plus, there may be an *extension* of up to three characters. A period separates the extension from the main part of the file name.

Examples: SCARF.NEW
 SCARF
 PRETTY.SRF
 MODERN.ART

The working name of the design, along with the current grid size, may be seen on the top left corner of the screen.

When **GridCraft**[™] begins, the *default* file name is "UNTITLED.PAT".

set-Up

Resize drw

[R]esize drawing]

Suppose we want to make a design to be used in a scarf. The normal, or default grid size of 200 x 100 would not be appropriate for the project.

To change the grid size, return to the MAIN MENU, by choosing "**G**o to main", and then select "set-**U**p" and "**R**esize drw". You will be prompted to enter the number of rows and columns for your design. We shall choose 1000 rows by 100 columns.

A prompt appears asking, "*Merge old sheet into new?*". In this case, since the sheet is already blank, it makes little difference which selection is made (logically, we choose "**S**tart fresh"). If, however, a design were in progress, the program will merge the design (or, at least as much of the design as will fit) into the size of the new grid work sheet.

When grid work sheets are re-sized, the new size is displayed, along with the current file name.

Switches

Number dir

[**Number direction**]

To change the direction of the number system, from the MAIN MENU, select "**S**witches" and then "**N**umber dir". By moving the mouse pointing device, you will see that the deed has been done. Now, we are ready to design!

Geodesic design

Draw
Polygon

In general, our objective will be to create one attractive image, and then copy it several times, at an angle. Next, we will consider the whole group of items, and make a mirror image of it, while leaving the original image intact. Finally, we will work with the entire image (the copied design plus its mirrored image), and copy it to fill in the entire length of the scarf.

After returning to the MAIN MENU, we shall select **D**raw and **P**olygon.

► Remember, a "polygon" is any closed plane figure bounded by three or more line segments. Use the **P**olygon option to draw triangles, squares, pentagons, hexagons, octagons, etc.

The prompt asks, "*No. of sides...*", or "number" of sides. Let us use a six-sided hexagon for our demonstration. We type <6> and <Enter>. The prompt on the top of the screen states, "*Pick the polygon center point*".

With the numbering system beginning at the bottom right, we move our pointer to row 25 column 25.

The mouse pointer is most convenient for large scale movements.

The cursor control (arrow) keys on the keyboard are most convenient for precise, detailed movement.

Using the arrow keys for precise movements, press the <Enter> key when the cross-hair marker is at row 25 Column 25. The next prompt states, "*Pick a point on the polygon*". Press the up-arrow key until the pointer is positioned at row 39 column 25. Then press <Enter>. A hexagon (in the current pen color) appears.

To terminate the construction of new polygons, press the <Esc>, or right arrow button on the mouse.

Speed button
Zoom in

In order to spruce up our polygon, we want to have it enlarged. Rather than bothering to leave the convenient DRAW menu, we will use a *speed button* to effect the "Zoom in" operation.

► Note: We could have also used the convenient speed button {☀} (for a "Full" VIEW). However, you did that last lesson!

Move the pointer (Charlotte) to the fourth speed button from the right (↔). As soon as you press the left, select button, the message prompts, "*Pick upper left corner of zoom area*". Do so (above and to the left of the hexagon), and also pick the lower right corner when prompted. An enlarged view of the hexagon, as shown in figure 2-1 is displayed.

set-Up

Big bckgnd

I want to make the polygon quite colorful before using it in a pattern. After all, if I color it first, it only has to be colored once. If I were to copy it first, each one would have to be colored separately.

I have decided that I want to connect each of the opposite corners of the hexagon, and then use the **Fill** option to color each of the resulting six sections.

First, I check to see if the pattern is completely enclosed. Fill operations can be unexpectedly dramatic if the area to be filled is not completely enclosed.

Secondly, I decide that I would like to use bright white lines. Since my background color is white, I must modify the big background color so that I can see my work more clearly.

To change the background color of the working area, "**Go to main**", select "**set-Up**" and "**Big bckgnd**". The sixteen colors in the palette appear. I click on the dark grey color to make my working area background grey.

Oops! Grey is the color of the grid lines, so now I cannot see the lines of the grid. Better choose "**Big bckgnd**" again. The red-brown, or light grey, looks good for this purpose.

Speed button

Redraw screen

► Sometimes, in manipulating screen images, the most recent update does not appear on the screen. If that ever occurs, simply press the speed button to the right of the {C} speed button, the {!!}. The screen will then be "re-written" and updated.

Speed button

grid Lines

One does not always have to view their design with the pattern of grid lines behind them. Press the speed button, {#} to toggle the grid design on and off.

Speed button

Color

To change the active color to white, select the speed button {C}, and click the mouse button on the bottom right square, bright white.

Draw

Line

Fill

Now that the background color and active colors have contrast, use the "Draw", "Line" option to connect each of the opposite angles of the figure, as shown in figure 2-2.

Notice how convenient it is that the line option (as with all Draw options) continues in the "Line" mode until it is terminated with the <Esc> or right mouse button.

Now select six pretty colors with which to fill in the interior of the design. Complimentary colors work well opposite each other while alternating light and dark hues also create an interesting effect. Figure 2-3, while in black and white in printed form gives the general idea of the pattern, without the ability to show dazzling colors.

Note: Now that we are done drawing with white, you may want to change the "Big background" color back to white.

Speed button
Switch Color

Note that you may modify any color that you want using the third speed button {c} or "set-Up" and "Mod colors". This option allows you to match your fibre or bead colors with what is shown on the screen.

View

Base

There is no longer any need to work in the "zoomed" view, so I shall choose to return to the beginning, or base view. Select "**G**o to main", "**V**iew", and "**B**ase".

File

save **A**s

Load draw

A cardinal rule of computing is, "*If you like it, save it.*" Go to the MAIN MENU, then select "File" and "Save draw". If the file has not been saved yet, you should choose "save **As**", and give it a name. Any name, such as "SCARF" will do. Now, if anything goes wrong in complex copying and editing, we can at least get the basic unit of the colored hexagon back anytime we select "File" and "Load draw".

Edit

list **Add**

Copy

This simple, but colorful, little design will become the image that is to be repeated many times on the scarf. It would probably look nice to angle it, and criss-cross it up and down the entire length of the scarf.

Obviously, we must return to the MAIN MENU by selecting "**G**o to main", and then select "**E**dit" to get into the EDIT Menu.

Add the hexagon to the *edit list* by selecting "list **A**dd", and pick opposite corners of the image.

Now, keep in mind that our "**c**opies" switch is set to multiple copies. You can tell in an instant since the sixth speed button, {°} displays two small circles.

When the "copies" switch is set to multiple copies, you will be asked how many copies you want on each copy operation.

If the "copies" switch is set to single copies, the program will automatically make only one copy during copy procedures.

Select "Copy". You will be asked, *Number of copies?*, to which you should respond, "4" by typing the <4> key, and pressing <Enter>.

The copy procedure continues by asking, "*Pick the COPY reference point*". Since I began the polygon at row 25, column 25, I shall choose that for my reference point.

Next, the program asks, "*Pick the new location for reference*". One could use the principles of trigonometry, figuring rise and run, and their resulting angles. I wanted a rise of 40 blocks for each shift to the left of 15 blocks, and found row 65 column 40 to create a nice appearance. Press <Enter> at that location, and <Enter> again to confirm that the positioning is "OK".

- ▶ If you find that the grid seems not to let you get to a particular grid location, you may use the "factor" speed button to change the size of the grid blocks in the working view.

Do not worry if a design is copied outside of the current view. The rest of the image, although beyond the current view, is faithfully copied.

View
Full

Although the small *viewing window* shows more of the total design than does the larger working area, the total design extends beyond the active working grid window.

Using the speed button {☀}, or selecting "**G**o to main", "**V**iew", and "**F**ull" accommodates itself to fit the full image into the working area.

Centering the entire image

A little sleuthing shows that the line closest to the left border lies only 3 blocks from the edge, while the line nearest the right margin is 13 blocks away.

To center the image perfectly on the grid (and therefore on your pattern), we must treat the entire five hexagons as a unit, and then shift that unit five blocks to the right.

To treat the image as a whole, we will have to "capture" the entire within the EDIT Menu *edit list*.

View
faCtor

or

Speed button
{%}

I can already tell that it will be extremely difficult to maneuver the mouse pointer so that the very top and very bottom of the entire image can be added to the list.

The "faCtor" facility within the VIEW Menu provides a convenient means of modifying the active view. The speed button, {=} makes it convenient to use the "factor" facility anytime, without the need to enter the VIEW menu.

Select "faCtor", and you will be asked, "*Scale Factor*". Decimal values, such as .8 or .5, will shrink the image while factors greater than one will enlarge the image. Entering ".8" in this case would work fine. There! Now it will be easier to work with.

Ask yourself, "Do I like the design's progress?"

If the answer is, "Yes", save the design.

If you are not sure, use the "save **As**" feature so that you will have the original design, as well as the updated one (under separate names).

Edit

list sHow

list cLear

list **Add**

Move

Return to the EDIT Menu.

If you were to choose "list sHow", you would see that the *edit list* is currently composed only of the single, first polygon.

Let us clear the list with "list cLear", and then include the entire five hexagons with "list Add". The design will show in shaded format to confirm the contents of the list. Pressing <Enter> or a mouse button will end the shaded display.

Now, we center the image. Select "**M**ove". Any reference point will do, but, I shall return to row 25 column 25 for the "*MOVE reference point*". When the program asks, "*Pick the new location for reference*", I'll move the pointer with the arrow keys five blocks to the right, to row 25, column 20, and then press <Enter>. The whole image is shifted, and is now centered properly. Figure 2-4 shows the scarf design in progress.

Again, I like what I see, so I'll use this opportunity to do a "File" "Save draw" (OK) procedure.

Getting oriented

Before trying to use **GridCraft**[™]'s "Image" feature, I am going to maneuver around, using VIEW features to determine the top, bottom, and side limits of the current design. The lowest point on the grid is now on the 12th row, while the highest is row 200. I also notice that there are twelve blank rows between the highest point of one hexagon and the lowest point of the next one.

View

Zoom in

Pan

It is sometimes, of course, necessary to do detailed work in a "zoomed" view. Unfortunately, only a few squares are shown, and one often needs to move outside the viewing area. The "Pan" feature is an excellent way to "slide" the current around within a zoomed window.

When you select "Pan" (also represented with the speed button {⇅}, 3rd from the right), you are asked to, "*Pick the reference point*". Click the mouse on any reference point. Next, you will be asked to pick a new location for the reference point. A small indicator line will follow the pointer until the mouse button has been pressed. The reference point will shift to the new location, adjusting the view within the current viewing window.

Before continuing, I'll set the view to Full, then set the factor to .8.

Edit

Image

Next, I will want to take a "mirror image" of the design in progress, and "flip" it over so that two columns of colored images cris-cross.

After getting to the EDIT Menu by way of the MAIN MENU, we should select "Image".

When prompted to, "*Pick the first image line end point*", the cursor should be moved to bottom center, row 12, column 50. Press <Enter> there.

At the "*Pick the second image line end point*" prompt, move the pointer top center, row 200 column 50, and press <Enter>. A shaded area shows the prospective positioning of the new image.

► Note: The center hexagon should be completely replaced with the shaded grey image. If adjustments are needed, use the arrow keys to move the shaded areas one block at a time until it is in perfect alignment.

Press <Enter> when the grey shaded image has been properly aligned. A nicely cris-cross image, similar to the one shown in figure 2-5, will appear.

Change *Edit List*, **Copy**

With the angles and number of copies that were used, the center hexagon sat almost perfectly on top of the original. Making a mirror image of our five colored images looks as if there are now nine hexagons.

It is an attractive pattern. Now, we need to repeat it along the entire length of the scarf. In other words, copy the nine hexagons enough times to cover the length of the scarf.

The steps to copy it will be almost identical to those used above.

First, we will use "faCtor" (*Speed Button* {*%*}) of about .8 to be adjust the image so that we can add the entire pattern to the *edit list*.


Next, we will go into the EDIT Menu, cLear the list, and **A**dd the full image to the list, using "list **A**dd".

Finally, we will select "**C**opy". Since the current image extends to the 200th row, we should select "*Number of copies?*" as "5" to fill the entire length (1000 rows) of the scarf.

When asked for the "*COPY reference point*", I would pick out the center, bottom position, row 12 column 50.

When asked for the "*new location for reference*", I would pick row 212 col 50, since I know that the standard spacing between hexagons is 12 blocks.

Two <Enter> keys will complete the copy procedure.

Selecting the speed button {, or "**F**ull" in the VIEW Menu will show the entire view. Although rather small to show the full detail, Figure 2-6 shows how a rather simple pattern can be made to be fairly complex and interesting in record time.

Remember, "Save, save, save."

Quit

When you select "Quit" from the MAIN MENU, there is always a warning, "*Be sure to save your work before quitting...*"

Hopefully, you have taken the time to save your work. If you had forgotten, it would be a chance to click on the "Oops..." button, and then go back to the FILE Menu, and save the work.

If you have already saved your work, then you are ready to confirm your action by selecting, "*Quit!*".

Lesson 3: From Beginner to Novice

Overview

The capabilities of computer aided design, as implemented in **GridCraft**[™], continue to amaze (and addict) as one exercises the program and learns its capabilities.

In this lesson, we will demonstrate some of the more advanced functions (although, one familiar with the basic way to use the program, advanced computer features are no more difficult to master than the basics).

Circles, arcs, and curves

Circles and curves are much more difficult for a computer to design than are lines. Try to fit circles, arcs, and curves onto a grid surface, and it becomes even more challenging.

- ▶ In general, the greater the density of the pattern, the smoother curves will appear.

set-Up

Resize drawing

Let us imagine that we are going to make a latch hook design that will measure 200 rows by 200 columns. We would like to create a "Yin-yang" design popular with many teenagers.

Each time **GridCraft**tm begins, the *default* grid size is used.

- ▶ Later, when you want to change the standard, or default, grid size, choose "**Resize drawing**" **and then** select "**Keep setup**".

In order to change to the desired latch hook requirement, from the MAIN Menu, select "**Resize drw**". The program will prompt, "*Number of rows:*" to which we will type "200" and press <Enter>. In response to the "*Number of columns:*" prompt, we will also type "200" and press <Enter>. Finally, there will be a prompt asking, "*Merge old sheet into new?*" with two options, "*Ok!*" or "*Start fresh*". Click on "Start fresh".

- ▶ If a design were in progress, and you selected "*Ok!*", the program would try to merge as much of the current design as would fit into the new grid size.

We are sure of the new size by the status line that shows the file name ("untitled.pat" when the program has just started, or the name specified if the "**New**" option of the FILE Menu was used) along with the grid size (200 * 200).

**Draw
Circle**

Upon finishing with SETUP, we will "Go to main" and select "Draw".

The design we have in mind will be entirely in black and white, so we must change the active pen color to black (using the {C} speed button).

Next, select "Circle" from the DRAW Menu.

When the program asks you to "*Pick the circle center point*", move the pointer dead center to row: 100, col: 100 and press the <Enter> key or left mouse button.

In response to the prompt, "*Pick a point on the circle*", move to row: 100, col: 160.

► A good way to move the pointer is to change the default jump number to "10" by pressing typing "10" and then pressing the <up arrow> on the computer keyboard. The pointer will move 10 blocks at a time until you set the jump number back to "1", or any other number you select.

After pressing <Enter> or the left mouse button, a black circle appears. Press <Esc>, or the right mouse button, to escape from circle drawing.

Draw

Bezier

A Bezier curve is a type of curving line that can be modified by "grabbing" onto "handles" to "bend" it into the desired shape.

After selecting "**B**ezier", the program prompts to, "*Pick the spline end point*". The "spline" is simply the end of the curve. The current pointer position, row: 160, column: 100 is perfect. Press <Enter> or left mouse button.

In response to the second prompt, "*Pick the spline second end point*", move the pointer to the other side of the circle, row: 40, col: 100, and press <Enter> or left mouse button.

When the program prompts, "*Pick the first control point*" select position row: 100, col: 50, and when it prompts to, "*Pick the second control point*", move to row: 100, col: 150, and press <Enter> or press the left mouse button. Figure 3-1 shows the circle with enclosed Bezier curve.

File
save As

So far so good. Return to the MAIN Menu by choosing "Go to main". Next, select "save **A**s", either by pressing the <A> key, or by moving the spider pointer to highlight the choice, and pressing the left mouse button.

► Had you selected "Save draw", the file would have been saved with a file name, "untitled.pat". Subsequent saves, after the design has been assigned a file name may be conveniently done by choosing "Save draw".

The program will prompt you to enter a drawing name. Let's choose "YIN" (with all due reverence to "yang") by typing "YIN" and pressing <Enter>.

► If you should happen to choose a file name that has already been used, the program will warn you with the message, "*File already exists!*". At that point, one could choose "Cancel" to cancel the save request, or "Ok" to give the program permission to overwrite the old file.

We are sure that the file has been saved because the file name will now appear on the status line.

More circles

The famous "yin-yang" symbol also includes small circles on each side of the design.

Return to the DRAW Menu ("**G**o to main", "**D**raw"), and then select "**C**ircle".

The first circle's center could be positioned at row: 70 col: 85, and be expanded to row: 76 col: 85.

Before drawing the second circle, press the <Esc> key and change the active pen color to white (preferably by using the {**C**} speed button).

The second (white) circle could be positioned at row: 130, col: 115 and expanded to row: 136, col: 115.

Draw

Fill

With the white pen selected, press the <Esc> or right mouse button to escape from the circle creation process, and select "Fill". Move the pointer inside the second small circle, and press the left mouse button or the <Enter> key. It fills with white. Now, move the pointer to the left half of the design (you are still being prompted to, "*Pick the interior of the area to fill*") and press <Enter> or the left mouse button again. The left side of the symbol, except for the small lower circle, will be filled with white.

Next, change the active pen color to black, and **Fill** the lower small circle, and the large right area of the symbol. Figure 3-2 shows the yin-yang symbol.

File

Save draw

Return to the FILE menu and select "**S**ave draw". The program notifies you that, "*File already exists!*". Of course it does! We just saved it a few minutes ago. Select "Ok" to give the program permission to replace this new, improved version on the disk.

▲ Note: Do not save the "yin" file in progress any more in this tutorial unless instructed to do so. We intend to "play" and manipulate it, but want to be able to come back to the FILE Menu and "**L**oad drawing" to get it back in its present state.

Edit

list **A**dd

In the previous lessons, we saw how EDIT could be used to copy, move, or delete an image, and how a mirror image could be created. We will use this "yin" image to see some of the other capabilities.

Suppose you were this far along, and decided that you wished that you had made the image a different size? Within the editing process, you can use the "**S**cale" option.

After getting into the EDIT Menu, the first step will be to use "list cLear" and "list **A**dd".

► If you try to manipulate an image before adding it to the *edit list*, the program will prompt you that, "*There is no list of grid squares to edit!*"

When you select "list **A**dd", make sure that the entire image is included as you mark the corners of the area to include in the list. The area included in the list will be shaded so that you can ensure that the proper sections of the total design have been marked. A mouse button, or <Enter> may be pressed to end the shaded display.

Switches

c**O**pies

T**R**acking

In advanced editing functions, the state of program "**S**witches" becomes important. There is a SWITCH Menu that contains ten different setting. However, the most commonly used **S**witch options are also available on the top row of speed buttons.

The "c**O**pies" switch, represented by the {°} speed button, does more than prompt for the number of copies desired.

► In "ro**T**ate", "I**I**mage", and "S**S**cale" operations, if the switch is on (represented by two small circles), the original image in the edit list will remain on the screen and on the grid while the image is manipulated.

When the switch is off (represented with one small circle, rather than two) the original image will disappear as the modified image is created.

The "T**R**acking" switch, represented by {♂} (tracking on) or {♀} (tracking off) affects how squares in the edit list are placed in the working area during editing.

► If **T**racking in on {♂}, the shaded areas of the edit list can be repositioned before placement by moving the mouse or arrow keys on the keyboard.

If **T**racking is off {♀}, the shaded areas of the edit list are placed without the opportunity to reposition it (without using the **M**ove option). The chief advantage of turning tracking off is to speed up the process of editing, as tiny movements of the mouse may make it seem as if the shading action goes on for a long, long time.

Edit
Scale

It's good knowing what we know now about switches! We know that when we scale an image, if we want the original image to disappear when the new, scaled image appears, we should turn the "cOpies" switch, {°} off (so that only one circle {o} appears).

Move the spider to the {°} speed button, click on it, and change it to {o}.

We will leave tracking {♂} on for now.

Since the design has already been added to the *edit list*, we may select "**S**cale". The program will prompt for you to, "*Pick the stationary point*". The point you choose for the stationary point depends mostly on where you want the remaining, scaled image to remain. In our example, if we want the image to remain in the center of the working area, we will position the pointer in the center, row: 100, col: 100. Other times, we might want the base of a circle to remain stationary, and would choose a spot on the base of the circle.

Next, you will be prompted to, "*Pick the handle point*". The program uses the metaphor of "grabbing a handle" to pull the image to its new, desired size. I'll go to the top of the symbol, row: 160, col: 100 and press <Enter>.

Finally, the prompt states, "*Pick the new handle location point*". I want to shrink the image a bit, so I'll move the new handle point to row: 145, col: 100, and then press <Enter>.

If the shaded area looks right, I'll press <Enter> again to complete the re-size operation. The new, scaled version appears.

Edit

roTate

Suppose I wanted to rotate a design, but did not want to create a full mirror image. You guess it! Rotate!

If you check "list sHow", you will see that the "yin-yang" symbol is still in the *edit list*. Of course, our "cOpies" switch {o} is still set to single, so a rotated image will replace the original, rather than being added to it, as would be the case if the copies switch were set to {°o}.

Select "roTate", and you will be prompted to "*Pick the pivot point*".

► Note that "roTate" is selected with the <T> key (if you are using the keyboard), rather than the <R> key which is used to remove portions of the design from the *edit list*.

Again, the center of the circle will be a good choice for a pivot point. The first ROTATE point could be any point on the outside circle, say row: 145, col: 100. The second ROTATE point, if we want to turn the image a quarter of a turn, could be row: 100, col: 145. Figure 3-3 shows the scaled, rotated yin-yang symbol.

Edit
Copy
Tracking on

The *edit list* is still comprised of the symbol. We can, therefore copy it, or change it. Let us take this opportunity to show the differences when **T**racking is on {♂} or off {♀}. If you have been following along, the speed button indicator for **T**racking is now on {♂}.

Select **C**opy from the EDIT Menu. You are prompted to, "*Pick the COPY reference point*". Good old row: 100, col: 100 will do, although a good case could be made for picking a point on the outer rim of the circle.

When the program asks, "*Pick the new location for reference*", try row: 40, col: 40, and press <Enter>, or the left mouse button. The shaded area appears, and it is apparent that it will not adequately fit on the grid.

► Because the copies switch {°} was set to single, the program did not ask how many copies we wanted. It made a single copy.

Use the mouse to try another location. The shaded image is continually drawn and redrawn, **T**racking the pointer to its new locations. Although very useful, you can see that it can be quite slow.

Pick a spot, and press <Enter> or the left mouse button. The image will be created. The portion that occupies the same space as the original figure will take over and color the squares it needs.

► It is quite likely that the constant movement of shaded and color areas has left some gaps in the display of the working area. The speed button {!!} will re-draw the image, and clean up any gaps.

Edit

list s**H**ow

Select "list sHow". You can see from the shaded area that the original symbol, even though it has been partially covered, is still the image in the *edit list*.

Edit

Copy

Tracking off

Now, lets change the tracking speed button to off by moving the pointer to the {♂} indicator, clicking the mouse to change it to the off position {♀}.

Select **C**opy again. Again, it will assume a single copy since the copies switch is set to single {0}.

The COPY reference point must be specified as before. This time, though, when you move your pointer to the "*new location for reference*" and press <Enter> or the left mouse button, and the shaded area appears, it will not track, or follow, the pointer as it is moved.

► When tracking is off {♀}, the shaded image will not follow the pointer after it is placed. If the placement is correct, confirm it with the left mouse button or <Enter> key. If the placement is incorrect, press <Esc> or the right mouse button to abort the copy procedure, and begin again.

File

Load drawing

All of this play has been informative, but the image is certainly not a "keeper". I would like to go back to the "yin" figure the way it was, before we scaled, rotated, and copied it.

The file "yin" is still on the disk in the state that it was last saved. These changes made during our play time have only been changed in the computer's random access memory, but have not been saved on the disk. We can, therefore, easily get the original back whenever we want it.

Go to the MAIN Menu, and select "File" and then "Load draw". You will be notified that, "*This will erase any current work*". That's o.k., so we click on "Ok".

► Had we wanted to save our work for later retrieval, we would have chosen "save **As**" before selecting "Load draw". Saving "as" another file name would have left "yin" in its original state, and saved the other work with a different name.

There are two different ways to select which drawing to load.

► Use the mouse pointer and click on the down arrow symbol to display the list of files on the current *default* directory. When the desired file appears in the list, move the cross-hair pointer to that file name and press the left mouse button. Then, move the pointer to the "OK" box and click again with the left mouse button.

If a desired file is on a different disk, it will be necessary to first highlight the name of the drive, such as "A:" and indicate "Ok" to get a list of the files on that disk.

► If you know the name of the file that you want, you may simply type it in from the keyboard.

The first keystroke activates keyboard input. The second keystroke on enters the file name in the appropriate space. Pressing <Enter> loads the specified drawing.

The file shown earlier in figure 3-2 should be on the screen after you have selected it to be loaded.

► When drawings are loaded, sometimes only a part of the total design first appears in the working area. Selecting **View/Base** will display the design, starting from the base position. The speed button {☼} (for **View/Full**) will show the portion of the grid required to display the entire design.

Print
Pattern graphic

Now, we want to get a printout of our design, so that the design has legends to tell us which squares should be black, and which ones should be white.

After "**G**oing to the main menu", we choose "**P**rint" and then "**P**attern gr" for (Pattern graphic).

The program asks, "*Starting at row...*". We could enter "1" to begin at the beginning, or we could begin at about the 35th row where the actual design begins. Next, the program will ask, "*End at row...*". Again, we could go to the end, the 200th row, or we could stop it at about the 165th row where the design ends. Figure 3-4 illustrates one page of what a sample printout looks like, when produced on a Hewlett Packard laserjet printer.

Switches
Swap patrn

Sometimes, with various printers, especially if the aspect ratio of grid squares have been changed, the patterns on a page may seem to run together. **GridCraft**[™] offers you the flexibility of changing the patterns associated with any color.

Going to the MAIN Menu, selecting "**S**witches" and "**S**wap pattern" presents you with a group of patterns similar to the one shown in figure 3-5.

If, for example, I would like to swap the pattern associated with black for one associated with another color, I would simply move my pointer to the black block, press the left mouse button, hold it down, and *drag* it to another color's square, and release the mouse button.

If I were to print another pattern graphic, the new patterns would be used.

Switches
Edit patrn

Normally, the ability to swap patterns is more than adequate for printing needs. You may, though, even modify an existing pattern.

After selecting "Edit pattern" in the SWITCHES Menu, you may *click* on the color to be modified, and use standard **GridCraft**[™] conventions of adding blocks with the left mouse button, and removing them with the right mouse button. Clicking on the "OK!" block modifies the pattern for this session, while "Cancel" cancels the operation. After selecting "OK", the program will ask, "*Save patterns to file?*". Answer "yes" if you want the changes to always to apply, and "no" if you want the changes only for this session's print jobs.

Print

color **Filter**

Sometimes, it is helpful to get a printout of only a selected color or colors.

In our "yin" example, suppose we would like to have a printout of only the black squares.

In the PRINT Menu, select "color **Filt**". A graphic similar to the one shown in figure 3-6 shows that, unless specified otherwise, all colors will be used. To filter out the white color, move the pointer to the white square, and press the left mouse button. The ☼ symbol beside it disappears.

- ▶ In order to "re-select" a color, simply press the left mouse button on the affected color a second time, or click on the "All" box to use all colors.

Color filters may be set either in the PRINT Menu, or in the SWITCH Menu.

When used in editing, the ability to filter colors can be extremely helpful in manipulating the *edit list*. When, in working with complex designs, simple pointer movements would never be able to mark the exact squares to be added to, or removed from, the edit list, you may first set the "color Filters" so that those selected colors are ignored when adding or removing parts of a design from the edit list.

When you are finished selecting which colors should be filtered out, press the mouse button while the pointer is in the "OK!" box.

Now, when you choose to print a "Pattern graphic", the program will first prompt, "*Color filters are on*", and then only the black squares will print. Next, the black squares could be filtered, and a print out of the white squares could be obtained.

Setup

Color name

There is a legend associated with each color printed in a pattern graphic. The user may want to change the name of the legend, especially if the colors were modified using the **Setup/Modify colors** option.

To change the names of the colors in use, select "**Color name**" from the SETUP menu. The first color, with its legend and name will appear. If you want to change its name, use the <Backspace> key on the keyboard to delete the exiting name, and type in the new name, and then press <Enter>. If that name does not have to be changed, simply press <Enter> to display the next color name. All sixteen colors may be changed in a similar manner.

► If you want to rename the colors permanently, rather than just during the current session, select "**Keep setup**".

Many of the new features of the **GridCraft**tm program have now been demonstrated. As you work through the tutorial section and experiment, you may want to refer to the reference section of this manual, which is organized alphabetically to answer additional questions.

We have reached another convenient stopping point.

Even if you plan to go directly to the forth, and last lesson, you should **Go** to the MAIN Menu

and select

Quit

so that the next lesson will have a common starting point for everyone.

Lesson 4 - The Power of Computer Aided Design

Overview

The first time you use a computer and **GridCraft**[™] to design artwork for a craft, it will probably take longer than the arduous task of designing by hand. It is only on subsequent designs that savings will be realized. Before long, the quantity and quality of your design work will have you wondering how you ever designed before the computer. Certainly, you will not want to go back.

A large part of the tremendous power of computer aided design results from the ability to store, retrieve, and re-assemble parts of designs that have been created. It is not "clip art"; it will be your original designs!

Re-sizing a design

The **Edit/Scale** feature demonstrated in the last lesson works well on a single image, such as the "yin-yang" emblem in the exercise, but sometimes, you may want to enlarge or reduce an entire image. Or, you may want to save a part of an image, and change its size for use in another design.

GCRESIZE

The creators of **GridCraft**tm have provided a convenient way to resize a design by creating a program called GCRESIZE (**GridCraft**tm **Re-Size**).

To use GCRESIZE, you must be outside of the program, that is, you must select **Quit** from the main menu.

If you are not in the **GridCraft**tm directory, you must change into it. For example, if you used the *default* installation procedures,

you would type

CD\GCRAFT

and press <Enter>.

► **Note:** If you are using the DOSSHELL Menu system on your computer, you must either exit the shell, or use the "Go to DOS" option.

I have decided that I want to put four small "yin-yan" symbols in the four corners around the large symbol created in the last lesson. We know from our experimentation that there is not enough room to place multiple copies of the symbol as it is now. I shall make it one-third the current size.

Now, type

GCRESIZE -S 3 YIN YIN3

and press <Enter>.

The general format of the command is to type the program name followed by a space, a dash, a program options, a space, the existing drawing name, a space, and the design's name.

GCRESIZE [options] oldname newname

Options include:

-s n : resize both x & y directions by factor n
-x n : resize the x direction (horizontally) by factor n.
-y n : resize the y direction (vertically) by factor n.
-u n : scale up instead of down (default) by factor n.
-d n : scale down (default)
-h : print the help message

Now, on our computer's hard disk, we have an image 1/3 the size of the original. The new file name is "YIN3".

Begin **GridCraft**tm again

Let us start the **GridCraft**[™] program again by typing

GCRAFT

and pressing <Enter>.

Notice that when the program begins, all of the *default* values, such as tracking on { ϕ } and multiple copies { $^{\circ}$ } are re-established when the program starts again.

Remember, to make any preferred settings the normal, or default values, you may choose "set-Up" and "Keep setup" after making changes.

► It is possible to keep different default settings for different applications by putting specialized groupings of drawings in unique *directories* on the computer. See Appendix A for an illustration.

File

Load

First, before using the new, reduced image, I would like to show you how convenient it can be to cut and paste images together.

In **GridCraft**[™], the basic procedure will be to save parts of a design that we will want to use later using the "save **P**art" command, and then merge that part into another design in progress using the "**M**erge draw" option.

While the demonstration is admittedly not a very artistic one, the capabilities and potential are nearly unlimited.

Let's load the scarf design created earlier in lesson 2. Select "**F**ile" and "**L**oad drawing".

The standard message, "*This will erase any current work...*" appears. *Click* on the "Ok" key (or press the letter "O"). Use the pointer, or type in the file name to retrieve the file, "SCARF".

This design has lots and lots of cubes. Suppose that I want to use a cube in another design. I will need to save a part of this design, a single cube, onto the disk.

"**Z**oom in"

{↔}

First, for practice and convenience, it would be helpful for fine detail work to "Zoom in" on a section. The easiest way is to use the "Zoom" speed button, {↔} and bring an enlarged view of a single cube into the working window.

File

save **P**art

Select "save **P**art" from the FILE Menu.

The program will prompt you to "*Pick the first corner of area to save*" and then "*Pick the opposite corner...*". Move the indicator box so that the cube is entirely captured, and press the left mouse button, or the <Enter> key.

► If you made an error in the zoom procedure, and do not have enough room to surround the image, you may <Esc> from the procedure, and select the factor speed button {*%*} and enter ".8" or such to change the image size on the screen of the working window.

As soon as you have identified (captured) the image, the program will prompt you to provide a "drawing name". This name must be different from the name of the whole image. For example, we could name this part of the design "CUBE". That way, we will have access to the individual "CUBE", and still be able to recall, manipulate, and print the "SCARF" design any time we want.

► Reminder: File names can have up to eight characters in the main body of the name (with no spaces) followed by a period, where an *extension* (again with no spaces) of up to three more characters.

Note that the status bar of the current design still identifies itself as "Scarf" and its size is still 1000 rows x 100 columns.

File

Load draw

Let us go now and load the "yin" drawing we were working on last lesson.

Select "**L**oad drawing". Indicate that it is "Ok" to erase the current work (it will be removed from memory, not from the disk), and retrieve the file, "YIN".

View

Base

Return to the MAIN Menu by selecting "**G**o to main", then select "**V**iew" and "**B**ase".

File

Merge draw

Return to the MAIN Menu again by choosing "Go to main", then select "File" and "Merge draw" (for "Merge drawing").

The program will ask us to "*Pick file to merge...*". Let's see how that single cube will look in this design. We will select the file "CUBE".

Next, the program will prompt, "*Pick the drawing origin*". **GridCraft™** will place the image above and to the right of the cross-hair pointer indicator when the left mouse button or <Enter> key is pressed.

Position the pointer in the lower left corner, about position row: 10, column: 10, and press <Enter> or the mouse button. Ta-da! Do it again and again! Use the "Merge draw" option to put little cubes all around the design. It wouldn't take long to create something that looked like figure 4-1.

Too bad we were working with cubes instead of stars! In any case, it is another design that is not a "keeper".

File
Load draw

We do not want to save this design. Instead, we want to get back to where we were the last time the "YIN" file was saved. We want to get down to some serious design work.

Select "**L**oad drawing", and get the "YIN" file. Use "**B**ase" from the VIEW Menu to bring the image into the working area, and then return to the FILE Menu.

File

Merge draw

Select "**M**erge drawing". Select the "YIN3" file, the one that we shrunk using the GCRESIZE program.

When the program asks you to "*Pick the drawing origin...*", move the pointer the lower left corner, row: 1, col: 1, and press <Enter>.

The small symbol is merged into the working area.

► When working with resized images, it is a good practice to "zoom in" and check it to see if any small modifications need to be made. It will be particularly useful to make sure enclosed areas are, indeed, enclosed, especially if you plan to use the "Fill" feature of the DRAW Menu.

File
save **A**s

The first look after the merge looks pretty good. I may still want to go back to the "Yin" file if things don't work out, but I think that I should save this new file in progress. I shall select "save **As**" from the FILE Menu, and give it a new name. I think I'll choose, "YIN.NEW". Figure 4-2 shows the result of the first merge.

Copy &
Image
{°}

Multiple images could be merged, just as we did with the cubes earlier. However, I feel that I have more control using the copy feature. Anyway, I think that it would look more attractive if two of the symbols were mirrored, in order to give more visual variety to the design.

The first step will be to set the "cOpies" speed button, {°} to single copy {o}. I will only want one image to be copied at a time, and when I make an image, I want to replace it, not add it to the affected image.

You probably remember how to copy. You enter the EDIT Menu, add the small symbol to the *edit list* by selecting "list **A**dd", and then select "**C**opy".

Figure 4-3 shows the completed design. The method used was to copy the merged symbol across to the right, and above. Then, the symbol was flipped using the "Image" option. The flipped image was then copied to the top right.

Switches
Prompts
{☺}

A word should be said about the fifth speed button from the left, the "Prompting happy face". When the face is smiling, he is very helpful, and gives lots of dialogue and prompting. Click on it, and it loses its smile, and becomes much less talkative.

When the **P**rompts switch is off, the shaded displays that appear in edit list displays is also turned off.

Experiment, using a procedure that you know well. Perform the actions with different prompting levels and see how it works!

This concludes the tutorial section of the manual.

We wish you happy {☺} designing!

Experiment, and have fun! (It won't break).

GridCrafttm Menu Summary

MAIN

File

Save or load a design.
View

Change the location or magnification of the drawing sheet.

Edit

Modify selected section of the design. (Includes move, copy, delete, rotate, image, scale, and color, as well as ways to manipulate the "edit list".)

Switches

Global settings that affect program operations. (Includes grid lines, color, tracking, copies, prompts, color filters, swap pattern, edit pattern, and disk print.)

Print

Sends design to a printer, using several available formats.

Draw

Uses geometric shape and text drawing functions. (Includes line, rectangle, circle, polygon, arc, ellipse, Bezier, fill, and text.)

set-Up

Set program configurations and preferences.
Quit

Quit the program.

FILE

New

Start a new design.
Load draw
[Load drawing]

Load, or retrieve a design (along with its associated color palette) that was previously saved onto disk.

Merge draw

[Merge drawing]

Merge a design into the current drawing sheet at a specified location.

Save draw

[Save drawing]

Save the design to disk using the currently specified file name.
save **As**

Save the design to disk while giving it a new file name.
save **Part**

Save a section of the current design to disk.
paleTte

Load only the color palette from a design that has been previously saved on disk.

R/c load
[Row/column load]

Load a design from a file containing row and column data.

r/C merge

[row/Column merge]

Merge a drawing into the current drawing from a file containing row and column data.
Go to main

Go to the MAIN MENU.

VIEW

Zoom in

Magnify a specified area of the drawing sheet.
Base

Return the view to the original location and magnification settings.

Full

Bring the entire design into the drawing window.

Pan

Move the location of the drawing sheet without changing the magnification setting. (Pan the image across the screen).

faCtor

Change the drawing magnification by a specified factor.
Redraw

Refresh the drawing area (to make sure that the screen has been updated as recently as possible).

Go to main

Go to the MAIN MENU.

EDIT

list Add

Select the portion of the current design that needs to be modified. Only grid squares that have been added to the *list* can be modified by the functions below, such as **Move**, **Copy**, and **roTate**.

list **Remov**

[list **Remove**]

Remove specified grid squares from the edit list.
list sHow

Show, or display, the grid squares that are currently included in the *edit list*.

Move

Move the grid squares currently in the *edit list* to a new location.

Copy

Make single or multiple copies of the *edit list* grid squares.

► If the *cOpies* switch is on (as reflected by the sixth speed button {°} on the top of the screen with two small circles, rather than one), then the program will ask for the number of copies desired. If the switch is off, the program will assume one copy is desired.

Delete

Delete the squares currently in the *edit list* from the design in progress.

► Note: be sure to save your designs periodically. There are no "undelete" options available.
roTate

Rotate the grid squares in the current *edit list* by a specified angle.

- ▶ If the *cOpies* switch is on, the rotated image plus the original grid squares will remain in the design. If the switch is off, the rotation will be "in place of", rather than "in addition to".
Image

Make a mirror image of the grid squares currently in the *edit list*.

- ▶ If the *cOpies* switch is on, the design will include the mirror image plus the original grids. If the switch is off, only the mirror image will appear.

Scale

Scale the blocks in the *edit list* by "stretching" or "compressing" the image by a specified distance.

cOlor

Change the color of the edit list grid squares to the currently active color setting.
Go to main

Go to the MAIN MENU.

SWITCHES

grid Lines

Turn the grid lines on or off of the working area display.
Color

Select a new pen color. The current pen color is displayed on the {C} speed button on the top of the screen.

Tracking

Enable or disable dynamic positioning of the cursor during editing operations. The current tracking setting is displayed on the speed button row with "♂" (tracking on) or "♀" (tracking off).

cOpies

Enable or disable multiple copies during editing functions (see EDIT MENU choices above).

► When enabled, the copy command prompts for number of copies desired, rather than assuming a single copy. Also, when enabled, the **cOpies** switch effects editing functions, such as *roTate* and *Image*, and *Scale* by adding (not replacing) the edited grid squares.

Prompts

Enable or disable help prompts displayed at the top of the screen.

► When the happy face in the speed button row is smiling, there will be a high degree of help messages. Disabling the prompts switch allows experienced users to perform functions quickly without using the higher prompting level.

color **Filt**
[color **Filter**]

Specify the colors to be ignored when saving or printing designs, or when making an edit list.

Swap patr

[Swap pattern]

Allows different graphic designs to be matched with any of the sixteen available colors for printing purposes.

Edit patr
[Edit pattern]

Allows the user to modify the design of any symbols used to represent the different available colors.

► Editing patterns would not normally be needed except in certain circumstances, such as when the aspect ratio of the grids has been made very small, and the printer cannot adequately fit a symbol into the available space.

Disk print

This switch enables the **GridCraft**[™] program to "print" to a printer, or to a disk file. As more pattern designs are exchanged electronically, printing to the disk can be a handy option. If the first speed button indicates "P" output will go to the printer. If it indicates "D", it will go to a disk.

Number dir
[number direction]

The "**N**umber dir" switch allows for convenient switching of the numbering system. When **GridCraft**[™] begins, the lower left corner of the *working grid* is numbered row 1, column 1. Selecting "**N**umber dir" reverses the numbering system so that row 1, column 1 is in the lower right corner. Various crafts work most conveniently with different numbering systems.
Go to main

Go to the MAIN MENU.

PRINT

Row/column

Print row and column data, as is appropriate for certain crafts.

Header gr

[Header graphic]

Produce a small banner of the drawing (primarily to label the top of row/column data for quick reference).

Block gr

[Block graphic]

Print the design with all colors show as solidly filled patterns.

Pattern gr

[Pattern graphic]

Print the design so that graphic legends represent their matching colors in the pattern.

color **Filt**

[color Filter]

Specify the colors to be ignored when printing or saving the drawing.

Go to main

Go to the MAIN MENU.

DRAW

Line

Draw lines by specifying end points.
Rectangle

Draw rectangles by specifying two corners.

Circle

Draw circles by specifying a center point and a point on the perimeter.

Polygon

Draw a polygon with equal length sides. Specify the number of sides, the center point, and one of the side vertices.

► Remember, it will be easier to create a perfect square as a four-sided polygon rather than trying to "eyeball" a rectangle to size.

Arc

Draw an arc by specifying the center point and its end points.

▶ Note: An arc is drawn counter-clockwise in **GridCrafttm**.

Ellipse

Draw an ellipse by specifying a center point, an end point for the minor axis, and an end point for the major axis.

Bezier

Draw a bezier curve by specifying the end points and the position of two control points. The control points form imaginary lines with the corresponding end points, to which the curve will be tangent.

► With practice, you will find the Bezier curve to be a very useful tool that, although sounding complicated, is very easy to use.

Fill

Allows an enclosed area to be filled with the current pen color.

- ▶ Note: an area that is all one color may also be considered to be "enclosed".

Text

The text option allows for easy construction of letters and characters to be placed in a design.

► Each letter is normally composed within an 8 x 8 grid pattern. Therefore, the proportional size of the text within the grid will vary with the size of the entire working grid. Letters and text may be modified by using the companion program "GCRESIZE" (see Lesson 4), saving, and merging drawings (see tutorial section).

Go to main

Go to the MAIN MENU.

SET-UP

Resize drw
[Resize drawing]

Resize the drawing sheet to a specified number of rows and columns.

Mod colors

[Modify colors]

Modify any or all colors on the color palette. Colors may be changed by modifying their red, green, and blue components.

swap **Patrn**
[swap **Pattern**]

Match the symbol to be printed with any associated color.
File name

Change the file name of the design (the name to be used when the design is saved to the disk).

Color name

Enter descriptions for colors that will be printed in the legend of a pattern grid.

Output set

Select the print quality (high or low) and the printer grid width.

- ▶ If the design is wider than the printer grid width number, different portions will be printed separately so that they may be spliced together.

Tablet

Sophisticated pointing devices, called tablets, may be calibrated for use with **GridCraft™**.

Sml bckgnd

[Small background]

Change the background color of the small, viewing window in the lower left-hand corner of the screen.

Big bckgnd

[Big background]

Change the background color of the large, working area of the **GridCraft™** screen.

Aspect r.

[Aspect ratio]

Change the ratio of the grid width to its height. Grid units can be stretched or shrunk horizontally or vertically to suit the needs of various crafts.

Keep setup

Save the settings (grid size, color palette, printer width, patterns, color names, and background) as a set of preferences that is automatically loaded when **GridCraft™** is started.
Go to main

Go to the MAIN MENU.

Reference Section

Screen Layout and Program Conventions

Drawing

Drawing may be accomplished by using *drawing tools*, or by using the mouse in freehand mode.

Drawing, freehand

Gridcraft[™] always permits freehand drawing mode, except when the program is requesting information. Any grid square can be colored with the currently selected pen color by simply pressing the left mouse button while the drawing pointer is over it.

Continuous freehand drawing can be done by holding the left mouse button down and moving the mouse.

Erasing grid squares freehand is accomplished by using the right mouse button.

Drawing, tools

A wide variety of shapes can be selected from the DRAW Menu. This lets you draw using straight lines, curves, triangles, circles, ellipses, arcs and curves.

Once a shape has been selected the program will prompt (at the top of the screen) for relevant information such as center points and end points.

Before the last point that defines the object you are drawing has been entered (using the left mouse button), a shaded outline of the shape will appear.

As the mouse is moved, the shape will change according to the position of the mouse pointer. You can therefore preview the shape before pressing the left, select, mouse button.

Shapes selected will be drawn with grid squares using the current pen color.

Once you have used a *drawing tool* to complete the drawing of a particular object, the program assumes you would like to draw another. Press the right mouse button, or the <Esc> key, to exit back to the DRAW MENU.

In all drawing operations, if you draw over a previously colored grid square, it will be replaced with the currently selected color.

Drawing Window

The screen is divided into distinct functional areas. The largest area is the **drawing window** which contains the work sheet (the grid sheet you draw on). This is the area where all design operations take place.

The entire work sheet may be moved within the *drawing window* (as though it were being slid to a new location beneath it). You may also modify the view of the *drawing window* by using "**Z**oom in" to increase the magnification, "**F**ull" to look at the full design, or "**B**ase" to return to the beginning (base) portion of the design.

Edit list

The *edit list* allows the user to mark which portions of the current design should be changed in some way (such as copied, rotated, or changed in color).

The first four options in the EDIT Menu allow sections to be added to or removed from the active *edit list*.

If a user tries to perform an operation such as copy that requires that the item first be included in the *edit list*, the prompt will state, "*There is no list of grid squares to edit!*"

After selecting "list **A**dd" in the EDIT Menu, you will be prompted to pick opposite corners of a box that will enclose the grid squares to be put into the list. This operation may have to be performed more than once to add irregular shapes to the edit list.

Grid squares in the edit list can be from anywhere on the drawing sheet and do not have to be adjacent to one another.

Keyboard Control

A mouse is required for **Gridcraft**[™]. However, keyboard control is quite convenient for menu selections and precise pointer control.

Menu selections may be made by pressing the keyboard letter associated with the capitalized letter of menu choices.

The <**Enter**> or <space bar> keys have the same effect as the left mouse button.

The <**Esc**> or <backspace> keys on the keyboard are interpreted the same as the right mouse button.

The cursor control keys (the four directional arrow keys) simulates movement of the mouse. When using the arrow keys, the pointer will jump a minimum of one grid square. Pressing the keys <1> to <0> will set the increment it jumps from one to ten grid squares.

Main Menu

The **MAIN MENU** is the hub around which all menu choices connect. There are only two levels of menus in *GridCraft*[™], the MAIN MENU and sub-menus for each major category (such as *Draw*, *Edit*, or *Print*) that may be selected from the MAIN MENU. Once into a sub-menu, the choice **Go to main** always returns the user to the MAIN MENU.

Menu organization

Menu options in **Gridcraft**[™] are organized on two levels. From the MAIN MENU, you can select the category of operation you would like, such as "View", "Edit", or "Draw". A "sub-menu" of choices will then be displayed, from which one can then select a specific operation. For example, to draw a line, one would first select "Draw" from the MAIN MENU, and then select "Line" from the DRAW MENU.

Each sub-menu has an option, "Go to main", that returns the user to the MAIN MENU.

Menu selection

Menu selection can be made using either the keyboard or the mouse.

To select a menu item with the mouse, simply move the pointer to the option you want. This action will highlight your selection with a rectangle. Press the left mouse button to select the highlighted option.

To select a menu item with the keyboard, simply press the letter on the keyboard that corresponds to the capitalized letter in the menu choice to select that option. (It does not matter whether you press the <Shift> key on the keyboard)

Every **GridCraft**[™] option is accessible with a maximum of three key strokes.

After selecting from the main menu, and then from the sub-menu, the program will prompt you for additional information or procedures, if required.

Mouse control

GridCraft[™] uses two buttons of a Microsoft[™] compatible mouse, the left and right buttons. Most operations require a single press and release of the proper mouse button. A few operations, such as a continuous freehand drawing, require you to hold the selected button down while performing an operation.

The left mouse button produces constructive results, and is referred to as the "*Select button*". It is equivalent to the <Enter> key on the keyboard.

The right mouse button is used for non-constructive results, such as erasing freehand drawings or cancelling operations. It is equivalent to the <Esc> key on the keyboard.

(see "Mouse pointer movements" in Fundamentals)

Program Customizing

GridCraft[™] can be customized to suite your particular work in a number of ways. It is this flexibility that makes it suitable for a number of different crafts that use grid formats for design purposes.

When you have set the options according to your preferences and needs, you may select **set-Up** from the MAIN MENU, and "Keep setup" to save your preferences as "default" settings.

Different default settings may be saved in different directories of the computer's hard disk.

Starting the Program

If the standard installation procedure, the start up procedure is:

CD\GCRAFT and press the **<Enter>** key. Then, type:

GCRAFT and press the **<Enter>** key.

(See Fundamentals, Starting the program.)

Screen layout

The **GridCraft**[™] screen is divided into the *drawing window*, the *viewing window*, the *menu*, the *status bar*, and the *speed button* section.

Speed buttons

Speed buttons are displayed at top center of the screen. **Speed buttons** are short cuts to frequently selected program options. Regardless of which menu may be displayed, the *speed buttons* provide immediate access to common design options and settings.

Although *speed button* icons may seem cryptic at first, they provide convenient options that would otherwise have to be accessed through menu options.

The *speed buttons* (from left to right) along with their menu equivalents are:

| | |
|--|------------------------------|
| P Print to (Printer or Disk) | Switch/Disk print |
| M _m Merge file | File/Merge draw |
| c Color Palette modification | set- Up/Mod colors |
| ¶ color filters | Switches/color Filter |
| ⊙ Prompting level | Switches/Prompt |
| ° Single or multiple copies | Switches/cOpies |
| ♂ Pointer tracking on or off | Switches/TTracking |
| # Grid line on or off | Switches/grid Lines |
| © Color select | Switches/Color |
| !! Redraw the design | View/Redraw |
| ↔ Zoom in | View/Zoom in |
| ↓ Pan the view within the drawing window | View/Pan |
| % Change the view by any factor | View/faCtor |
| ⊗ show a full view of the design | View/Full |

Status bar

The *status bar* provides status information such as file name and grid size, pointer location, and prompting messages from the **GridCraft**[™] program.

The current drawing name, and the grid size (rows and columns) will be displayed on the top left line of the *status bar*. The program begins new drawings with the file name "UNTITLED.PAT". Unique file names can be chosen using the "save **A**s" command in the FILE Menu, or in the SET-UP Menu, using the "**F**ile name" command.

The right side of the status bar displays the current row and column position of the drawing pointer.

The center section of the *status bar* is used any time the program needs to prompt the user to perform an operation.

Switches

The SWITCH MENU, many options of which are also associated *speed buttons*, contain program settings that are commonly changed or switched to effect design operations.

The display of "grid **L**ines", as shown in the drawing window, can be toggled on or off.

The active pen "**C**olor" that will be used for drawing can be changed to any of sixteen adjustable colors.

The "color **F**ilter" switch lets you select colors that should be ignored during drawing saves, printing, and editing operations.

The "**P**rompts" switch determines the amount of prompting that the **Gridcraft**[™] program will provide. When a happy face symbol is shown on the *speed button*, there is a high level of prompting.

Some switches directly impact upon how other functions will operate. The "cOpies" switch determines whether single or multiple copies are made during "*Edit*" operations. It also determines, in "image", "rotate", and "scale" procedures, whether the blocks in the *edit list* are modified and replaced, or modified and copied.

The "TTracking" switch determines how sections of a design are placed into the *drawing window* during editing. If tracking is off, shaded images (the display used before actually placing the image) are frozen to the location initially indicated. If tracking is on, the section will track, or follow, the mouse pointer. (Positioning it in the drawing sheet can then be done with the mouse or directional keys).

Speed keys related to **Switches** are:

| | |
|----------------------------------|----------------------------|
| ⊙ Prompting level | Switches/Prompt |
| ° Single or multiple copies | Switches/cOpies |
| ♣ Pointer tracking on or off {¶} | Switches/TTracking |
| # Grid line on or off | Switches/grid Lines |
| C Color select | Switches/Color |

Viewing window

The lower left portion of the screen presents a second, small, window that "looks" onto the drawing sheet at a constant magnification (one screen pixel equals one grid square).

The **viewing window** lets you see from a distance what your complete design looks like while your are working at a more detailed magnification in the main drawing window.

The only operation that can be done directly in the viewing window is to "**Pan**" a view of the drawing to a new location.

Views

When working on a drawing, it is not necessary for the design to be completely within the drawing window on the computer screen.

Gridcraft[™] provides functions under the VIEW MENU that lets you work on any section of the drawing sheet at any magnification that is comfortable.

Even if the computer screen's *drawing window* is set to only view a portion of the drawing sheet, some operations will produce results that effect areas outside the view. For example, a copy operation may make copies beyond the current view. Using the "**F**ull" option of the VIEW Menu will bring the full design within the view of the *drawing window*.

Several "*speed buttons*" (see above) allow convenient control of the active view, without having to navigate to the VIEW Menu. These viewing speed buttons are:

| | |
|--|---------------------------------------|
| !! Redraw the design | V iew/ R edraw |
| ↔ Zoom in | V iew/ Z oom in |
| ↓ Pan the view within the drawing window | V iew/ P an |
| % Change the view by any factor | V iew/ f a C tor |
| ⊗ show a full view of the design | V iew/ F ull |

The Commands: An Alphabetical Cross Reference

| Command | Menu | Procedure |
|---------|------|-----------|
|---------|------|-----------|

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Arc

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Draw an arc by specifying the center point and its end points.

The first prompt will ask, "*Pick the arc center point*". Move the pointer to the desired location, and press the select button, or <Enter>.

An arc is drawn counter-clockwise in **GridCraft™**. When the prompt asks, "*Pick an end point*", move the pointer to the position at the end of the arc that you will be able to move counterclockwise. Press the <Enter> or left mouse button.

When the prompt states, "*Pick the second end point*", move the pointer until the indicator line looks properly positioned, and press the <Enter> key or left mouse button.

An arc will be drawn as accurately as possible, given that curves must sometimes be adjusted to fit within a rectangular grid pattern. Press the right mouse button or <Esc> key to terminate arc drawing.

Aspect r.
[Aspect ratio]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SETUP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Not all craft designs are best represented using true squares. By selecting "**Aspect r.**" from the SETUP MENU, the ratio of the grid width to its height can be set. Thus each grid unit can be stretched or shrunk either horizontally (the x axis) or vertically (the y axis).

Grid units can be stretched or shrunk horizontally or vertically to suit the needs of various crafts.

When **GridCraft**[™] begins, the ratio of the x axis to the y axis is 1 to 1. (In order to accommodate for proper printing, the true ratio is .8 to .8, or 1 to 1). If the craft that you use does not use perfectly square grid markers, it would be wise to change the "**Aspect ratio**", and then save your preferences with the "**Keep setup**" option.

If, for example, you want to make the grid units twice as high as they are wide, you would select "**Aspect ratio**", and then enter a value twice as great for the vertical scale as for the horizontal scale. For example, one could enter **.8** at the *Horizontal scale* prompt, and **1.6** at the *Vertical scale* prompt.

Changing the shape of the grid units doesn't change the size of the drawing sheet in its number of rows and columns, nor is the basic drawing information changed. You may, therefore, change the aspect ratio of a design at any time. Pattern printouts will reflect the current aspect ratio settings.

Base

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

VIEW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The "**B**ase" view returns the view to the beginning view (where row 1, column 1 is visible).

Bezier

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Draw a bezier curve by specifying the end points and the position of two control points. The control points form imaginary lines with the corresponding end points, to which the curve will be tangent.

Many people find Bezier curves to be more convenient and practical for many design applications than arcs.

When creating a Bezier curve, you are first prompted to, "*Pick the spline end point*". Simply put, that will be one end of the curve. Move the cursor to the desired end point of the curve, and press the left mouse button or the <Enter> key (remember fine adjustments may be done with the arrow keys on the keyboard).

The second prompt asks the user to, "*Pick the spline second end point*", or curve end. Again, move the pointer and press the select button.

Next, the program will prompt, "*Pick the first control point*". The "control point" allows the user to pull the line between the two point, almost like a rubber band, forming a curve with the indicator line as it moves. Press the select button.

Finally, the prompt "*Pick the second control point*" appears, and allows the user to choose another point on the line and "pull" the curve again, possibly rounding the curve, or even pulling it in an opposite direction, making a sine curve.

When done with the positioning, press the <Enter> key or left mouse button. Press the right button, or <Esc> key to terminate the construction of Bezier curves.

Big bckgnd
 [Big background]

| Command | Menu | Procedure & Explanation |
|----------------|-------------|------------------------------------|
|----------------|-------------|------------------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Change the background color of the large, working area of the **GridCraft™** screen.

After selecting "**Big bckgnd**", a palette of sixteen colors will appear. Move your pointer to the desired working window color background, and press the select mouse button.

If you want your preferences saved for normal use, use the **Keep setup** option.

Block graph

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

PRINT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Print the design with all colors shown as solidly filled patterns.

Circle

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Draw circles by specifying a center point and a point on the perimeter.

When you select "**C**ircle", you will be prompted to, "*Pick the circle center point*". Move the pointer to the position on the grid where you want the center of the circle, and press the select button on the mouse, or the <Enter> key.

There will be another prompt to, "*Pick a point on the circle*". As you move the mouse pointer, a fine marking line displays the positioning where a circle will appear. Press the left mouse button again, and the circle will appear (in the currently selected pen color).

The **GridCraft**[™] program will continue to draw circles until the <esc> or right mouse button has been pressed. **c**olor

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

This option changes the color of an existing portion of the design.

Make sure that the design section to be modified is in the *edit list* (see list **A**dd and list **sH**ow).

Use the color {C} speed button, and select a desired color.

Select "c**O**lor". Shading confirms the area about to be affected. Press the left mouse button to change the color of the original line to the newly chosen color.

Color

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Select a new pen color. The current pen color is displayed on the {C} speed button on the top of the screen.

The speed button with the {C} also performs the "Color" switch function. The active color is displayed on the speed button. To change the active color, move the pointer to the desired color, and press the left mouse button, or <Enter> key.

A palette of sixteen colors is available. Each of the sixteen colors can be modified in a nearly infinite fashion (see "Modify colors" in the set-Up menu).

color **F**ilt
 [color **F**ilter]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Specify the colors to be ignored when saving or printing designs, or when making an edit list.

The "color **F**ilt" option can be useful to select colors that should be ignored during "list **A**dd" and "list **R**emove" operations.

Color filters do not, however, unselect what has already been added to the list.

color **F**ilter

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

PRINT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Specify the colors to be ignored when printing the drawing.

Color name

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Enter descriptions for colors that will be printed in the legend of a pattern grid.

A pattern legend is printed at the bottom of each pattern printout with a color description for each pattern used. This description can be entered for each pattern by selecting the **Color name** option of the SETUP MENU.

When choosing the option, the first color and symbol will be displayed. If the name should be changed, you may backspace and correct the listing, such as Royal Blue for Blue. Pressing the <Enter> key accepts the displayed value, and proceeds to the next color and pattern in the list.

copies

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Enable or disable multiple copies during editing functions (see EDIT).

When the "cOpies" switch is enabled {o_o}, the copy command (in the EDIT menu) prompts for number of copies desired. Also, editing functions, such as "roTate", "Image" and "Scale", add to the edited grid squares.

When the "cOpies" switch is off {o}, the program makes a single copy, and replaces, rather than adds to edited grids during "roTate", "Image" and "Scale" operations.

In summary, the **cOpies** switch affects the editing functions in the following ways:

1. **Copy** (in the EDIT MENU) will prompt the user for the number of copies to be made. If a single circle is showing, indicating that the **Copy** switch is off, the program will assume that only a single copy is desired.
2. Other options in the EDIT MENU, including **roTate**, **Image**, and **Scale** will behave differently if the **cOpies** button shows two circles. When the switch is on, the original image in the edit list will remain on the screen (and on the grid) while the image is manipulated. When the **cOpy** switch speed button is off the original image will disappear when the manipulated image is created. Of course, it is possible for the transformed image to overwrite an original square. One should always take care to save their work before performing potentially disruptive functions.

When the **cOpies** switch is off, the **Copy** function in the EDIT MENU produces only a single copy and the **roTate**, **Image**, and **Scale** operations transform the original squares in the list.

The "cOpies" switch is represented on the speed button row by the fifth speed button from the left. When the display shows two small circles, the switch is set to multiple copies. When only one small circle is visible, the switch is set to single copies.

Copy

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Make single or multiple copies of the *edit list* (see "list **Add**") grid squares.

If the *cOpies* switch is on (indicated with the speed button icon {o_o}), the program will ask for the number of copies desired. If the switch is off (indicated with {o}), the program will assume one copy is desired.

Respond to the "*Number of copies*" prompt with the desired number of copies and press the <Enter> key.

The program prompt requests, "*Pick the COPY reference point*". Pick a point in the *edit list* by moving the pointer and pressing the select button on the mouse.

The next prompt asks, "*Pick the new location for reference*". Move the pointer to a new location, and press the left mouse button.

Immediately, a shaded display of the copied area will appear, along with the prompting message, "*right button = ABORT left button = OK!*". If the lines are positioned properly, press the left, select button or <Enter> key. If the images are not in the right place, press the right mouse button or <Esc> key.

Copied images may extend beyond the screen display of the **working area**.

Delete

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Delete the squares in the *edit list* from the design in progress.

The area to be deleted (the area in the edit list) will be shown in shaded color. Pressing the left button confirms that you want to delete those squares from the current design.

Disk print

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

This switch enables the *GridCraft*[™] program to "print" to a printer, or to a disk file. Increasingly, as more pattern designs are exchanged electronically, printing to the disk will be a handy option. If the first speed button indicates "P" output will go to the printer. If it indicates "D", it will go to a disk.

Note: The only change one will notice immediately after selecting "Disk print" is that the first speed button will reflect either a "P" or a "D".

Disk print files are printed in a binary format.

Draw

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

MAIN

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Access tools to create geometric shape and text drawing functions. (Includes **L**ine, **R**ectangle, **C**ircle, **P**olygon, **A**rc, **E**llipse, **B**ezier, **F**ill, and **T**ext.)

The freedom and creativity of **GridCraft**[™] drawing tools, combined with superior editing capabilities, far outstrip those offered in simple paint programs.

Before selecting an item from the DRAW MENU, check to see if the color you want is the active color. If not, change it using the {C} (color) *speed button* to change.

Edit

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

MAIN

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

A number of powerful editing features are available from the options listed in **E**dit. Selected parts of a design can be modified or used to create new parts in a variety of ways.

Included in editing options are **M**ove, **C**opy, **D**elete, **r**o**T**ate, **I**mage, **S**cale, and **c**olor. Sections of a design may be moved, copied, or deleted, or they may be scaled, rotated, or mirrored. Colors may be changed retroactively. Switches (see "**S**witches") determine whether the original image stays or disappears during editing procedures.

The first step in any edit operation is to determine which grid squares will be modified or manipulated. This is done by including grid squares in an *edit list* (using "list **A**dd").

The various editing operations, when selected, will be performed on the grid squares that are currently in the *edit list*.

When a section of the design is added to the *edit list*, it may then be manipulated or copied in any of the ways mentioned above. Items may be added to the list, or removed from the list. The entire list may be cleared, using "list **c**Lear", so that the user may then edit different sections of the design.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Edit list

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Sections of the design that have been marked for editing functions.
See "list **A**dd" "list **s**How" "list **R**emove" and "list **c**Lear"

Edit patr
[**E**dit pattern]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Allows the user to modify the design of any symbols used to represent the different available colors.

If the printer cannot adequately fit a symbol into the available space, particularly if the aspect ration of grid squares has been modified, the user may construct new symbols to represent the colors of their pattern design.

Selecting "**E**dit pattern" will show the sixteen colors, with an enlarged view of the currently selected color.

First, make sure the color for the symbol pattern that you want to modify is selected (press the left mouse button on the desired color).

Next, edit the large, block image for the symbol selected. Clicking the left mouse button toggles the color of each block on and off (if you make a mistake, press the left button a second time to change the block again).

When all the desired modifications have been made, press the left mouse button while the pointer is in the "Ok!" box.

If you want the changes to always apply, you may save them as defaults by responding to the "*Save patterns to file?*" prompt by clicking in the "Yes" box. Selecting "No" will use the new pattern only for printing the current design.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Ellipse

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Draw an ellipse by specifying a center point, an end point for the minor axis, and an end point for the major axis.

When the prompt asks, "*Pick the ellipse center point*", move the pointer to the desired position and press the left mouse button.

The next prompts will be, "*Pick the minor axis end point*" and "*Pick the major axis end point*". The major axis is the longer axis. A preliminary indicator will show where the ellipse is to be placed. Moving the pointer will continually reposition the ellipse.

When satisfied with the size, shape, and position, press the left mouse button or the <Enter> key. An ellipse, in the current color, will be drawn.

faCtor

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

VIEW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The "*faCtor*" facility of VIEW provides a convenient means of modifying the active view. Selecting "*faCtor*" will result in the prompt, "*Scale Factor*".

Entering decimal values, such as .8 or .5, will shrink the image within the *working area* while entering factors greater than one will enlarge the image.

The speed button, {*%*} also accesses the "*faCtor*" facility anytime, without the need to enter the VIEW menu.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

File

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

MAIN

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The **GridCraft**[™] FILE MENU (accessed by selecting "File" from the MAIN MENU) provides a variety of choices of how to save files, and parts of files. Complete designs (the complete drawing sheet) may be saved using the "**Save draw**" or "**save As**" options. "**Save draw**" saves a design using the working file name, while "**save As**" prompts the user for a new file name. Rectangular portions of a design may be saved using the "**save Part**" option.

The formats of the saved files are identical so that parts of a design can later be loaded as independent drawings.

Designs saved on disk can also be merged into a current drawing sheet using the "**Merge draw**" option. When a drawing is merged into a new grid sheet, the user is prompted to "*Pick the drawing origin*", to mark the position (the lower left corner) where the saved portion is to be merged into the existing work sheet.

One should, for safety's sake, be sure to save a drawing in progress before merging files. It is possible that the merged data may overwrite grid boxes that are already in use.

The color palette for a drawing normally uses the current color palette settings for the design in progress. It is possible to retrieve only the color palette from any drawing, or symbol, using the FILE MENU option "**palette**".

The flexible filing system of **GridCraft**[™] allows for the creation of symbols, or small drawings, that can be used repeatedly in different drawings by using the merge option.

Design information can also be saved in row and column formats, using "**R/c load**" and "**r/C merge**". The row/column method may be useful for saving summaries of grids, such as is used in loom treadle settings.

File name

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Change the file name of the design (the name to be used when the design is saved to the disk).

Allowable file names have a maximum of up to eight characters, followed by a period, and an *extension* of up to three additional characters.

Fill

| Command | Menu | Procedure & Explanation |
|----------------|-------------|------------------------------------|
|----------------|-------------|------------------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Allows an enclosed area to be filled with the current pen color.

Note: One should **be careful** when using "**Fill**". If you try to fill an area that is not completely enclosed, the "paint" of the fill operation can spill out beyond the area you wanted to fill.

When beginning the "**Fill**" procedure, make sure that the desired active color has been set (see "**Color**")

When the prompt states, "*Pick the interior of the area to fill*", move the pointer within the enclosed area and press the left, select mouse button, or <Enter>.

Press the right mouse button, or <Esc> key to terminate the fill option.

Note: an area that is all one color is also considered to be "enclosed", and may be changed.

Full

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

VIEW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The "*Full*" view automatically adjusts the viewing factor so that the entire image is displayed in the *working area*.

Go to main

| Command | Menu | Procedure & Explanation |
|----------------|-------------|------------------------------------|
|----------------|-------------|------------------------------------|

Sub-Menus

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

All sub-menus provide an option, "*Go to main*", which returns the user to the MAIN MENU.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

grid Lines

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Turn the grid lines on or off of the working area display.

The speed button to the left of the {C} color button (the one that looks like a grid) also performs the "grid **L**ine" function.

Hader graph

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

PRINT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Produce a small banner of the drawing (primarily to label the top of row/column data for quick reference).

Image

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

"Image" makes a mirror image of the grid squares currently in the *edit list*.

If the *cOpies* switch is on {o}, the design will include the mirror image plus the original grids. If the switch is off {o}, only the mirror image will appear.

When prompted to, "*Pick the first image line end point*", the cursor should be moved to that point, and the left mouse button or <Enter> key pressed.

At the "*Pick the second image line end point*" prompt, move the pointer to the location that the reference point should be "flipped" to. A shaded area shows the prospective positioning of the image. Press <Enter>, or the left mouse button a second time to confirm the procedure.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Keep setup

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Save the *default* settings that will be automatically loaded when **GridCraft™** is started.

Once you have configured **GridCraft™** for your particular needs, you can save the settings to avoid repeating the same procedures each time you start the program.

Technically, by selecting the **Keep setup** option from the SETUP MENU, you create a file, GRID.CFG, in the current working directory of your disk. This file contains the following setup information:

- * Standard drawing sheet size
- * The aspect ratio (grid block height to width)
- * Standard color palette
- * Pattern to color mapping
- * The legend of color pattern indicators
- * Standard printer width
- * Normal background colors for working and viewing windows.

When the program starts, it first looks for a configuration file (GRID.CFG) in the currently active hard disk directory. If "GRID.CFG" is not found in the current (default) directory, the **GridCraft™** program will search the computer's search path (that is set in the "AUTOEXEC.BAT" file) to try to find another location of "GRID.CFG".

If a configuration file is found, then all of the settings are restored. If the file is not found in the current directory, or in specified path searches, then the program uses standard **GridCraft™** settings, as they were when the program was shipped.

Since the program first looks in the current directory for a configuration file, it is possible to have different setup configurations, as long as they are kept in different directories.

Line

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Draw lines by specifying end points.

As soon as "Line" has been selected, the shape of the cross-hair pointer changes, and the status line (middle top) prompts us to "*Pick the line start point*". Move the pointer to the desired location, and then press the left, select button, or <Enter> key on the keyboard.

The prompt changes to, "*Pick the line end point*". As the pointer moves, a fine white line moves to show the position of the line. Press the left mouse button again, or <Enter>, and a straight line will appear.

list **Add**

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Select the portion of the current design that needs to be modified. Only grid squares that have been added to the *edit list* in this manner can be modified by available EDIT functions.

Selecting "list **A**dd" brings the prompt, "*Pick the first corner of the area to include*". Move your pointer above and to the outside of the area you want to mark, and press the left mouse button. The next prompt informs you to, "*Pick the opposite corner of the area to include*". As you drag the pointer along, a thin rectangle will surround the desired image. When you are done, press the left mouse button a second time. The area in the *edit list* will be displayed in a shaded color. Press the left mouse button again to end the list display.

list c**L**ear

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Clears the current *edit list* (so that a new one may be defined).

List **cLear** totally clears the *edit list*. Compare to "list **R**emove", which prompts for sections to be removed from the edit list.

"list **cLear**" is a good safety precaution to use before marking totally new sections with "list **A**dd".

list **R**emov
[list **R**emove]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The editing option "list **R**emove" allows sections that were previously added to the *edit list* to be removed from the list.

The user will be prompted, "*Pick the first corner of the area to exclude*", and then, "*Pick the opposite corner of the area to exclude*".

When the mouse button has been pressed, the grid squares remaining in the *edit list* will be displayed until a mouse button is pressed to end the display.

list s**H**ow

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Shows, or displays, the grid squares that are currently included in the *edit list*.

Selecting "List sHow" displays the *edit list* in a shaded color. Clicking either mouse button, or the <Esc> key will terminate the display of the edit list.

The items shown in the list will be used by *editing* options such as "Move", "Copy", "Delete", "roTate", "Image", "Scale", and "cOlor".

Load Drawing

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Load, (retrieve) a design (along with its associated color palette) that was previously saved onto disk.

When you select **Load Draw**, you will first be prompted, "This will erase any current work...". If you want to be sure to save the current work in progress, you may select "**Cancel**", and then save your work.

Selecting "**Ok**" results in a list of the files in the current directory. Clicking the left mouse button on the down arrow icon (↓) brings more files in the directory into view, if there are, indeed, more files there.

To select a file, move the mouse pointer to the desired file, and click the left, select button. The file will be highlighted with a different color. Then select "**Ok**" to load the file.

Merge Drawing

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Merge a design into the current drawing sheet at a specified location.

Selecting "**M**erge draw" will result in the prompt, "Pick file to merge..." along with a list of designs in the current directory.

Again, clicking the left mouse button on the down arrow icon (↓) will bring more files into view. Select the desired file by moving the pointer to the file, and pressing the left mouse button and then, "O**k**".

Next, you will have to "Pick the drawing origin". Move the pointer to the position in the drawing area where you want the lower left corner of the merged file to appear, and then press the left mouse button or the <Enter> key.

Consideration should be given to color palettes during merging. When a symbol or drawing is merged into a drawing sheet, it adapts itself to the color palette that is currently in use. Without a bit of planning, a merged symbol may not display the colors it was saved with.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Mod colors
[**M**odify colors]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Modify any or all colors of the sixteen color in the color palette. Colors may be changed by modifying their red, green, and blue components. A total of more than 262,000 color combinations are possible.

When "**M**odify Colors" has been selected, a display of sixteen colors, and three control panels is shown.

Move the pointer to the color that you want to modify, and click the mouse button while on that color tile.

Next, move the pointer to one of the three color control panels (red, green, or blue). Press the left mouse button, hold it down, and *drag* it to a new position, thereby re-blending the color mix. Release the mouse button when the desired color and shade has been mixed.

Select the "Ok!" box with the mouse button to use the new palette for this design.

Select "*Cancel*" to cancel the changes, and return to the previous settings.

Modified color palettes are saved as a part of each drawing, so that they will be restored when the drawing is loaded from a disk. If you want to work with a preferred palette most of the time, modify the colors, and then save them using the **Keep setup** option.

The speed button {C_c} is a quick way to access the "**M**odify colors" option.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Move

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Moves the grid squares currently in the *edit list* (see "list **A**dd" and "list c**L**ear") to a new location.

The first prompt after selecting "**M**ove" is, "*Pick the MOVE reference point*". That point can be any place within the image. Press the select, left button, or <Enter> on the keyboard.

The prompt changes to "*Pick the new location for reference*". An indicator line is displayed as you move the image.

When you pick the new location, a shaded image appears, along with the message, "*right button = ABORT left button = OK!*" Pressing the right mouse button or <Enter> moves the object.

Note that if "tracking" is on (indicated with the speed button symbol {σ}) that the image in the *edit list* will follow, or track, the mouse during "**M**ove" operations.

New

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Start a new design.

Selecting "**N**ew" results in a prompt, "*Enter drawing name:*". Enter a file name (and directory path if you so choose) that contains up to eight characters (no spaces) in the main body of the name, and up to three characters in the extension. Example: "SUPER.PAT"

Number dir
[**N**umber direction]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The "**N**umber dir" switch allows for convenient switching of the numbering system. When *GridCraft*[™] begins, the lower left corner of the *working grid* is numbered row 1, column 1. Selecting "**N**umber dir" reverses the numbering system so that row 1, column 1 is in the lower right corner. Various crafts work most conveniently with different numbering systems.

Offset

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The "Offset" option sets the vertical and horizontal offset for the next "File/Load drawing". The offset is only in effect for the next File/Load.

After selecting **Offset**, one is prompted to input data (in terms of blocks) for, "*Horizontal offset*" and "*Vertical offset*".

Output set

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Select the print quality (high or low) and the printer grid width.

The "Output set" option begins with the user being prompted to select print quality. Low (fast) options are good for draft work while High (slow) print is best for masterpieces.

The second prompt allows for the setting of printer grid widths. The default value is 60, which is appropriate for normal sized square grids on printers that print on 8 1/2 x 11 inch paper.

The number of columns that can fit on a page can vary depending on the width of the printer and how it is set up, and with the SET-UP "Aspect ratio". Experimentation may be required if you have a wide printer, or if your primary craft uses smaller or larger than normal grid sizes.

If the design you create is wider than the printer is able to print, then the number of rows shown in this prompt will be printed in sections. Very large designs can then be spliced together to create whole walls of designs, if desired.

Again, if a setting matches your every-day needs, save the setup using the **Keep setup** option.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

palette

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

In the FILE Menu, "paleTte" loads only the color palette from a design that has been previously saved on disk.

You will be prompted to, "*Pick the file with the desired palette*". Use the mouse pointer and left mouse button to select the file with the preferred palette (you may need to click on the down arrow [↓] icon to bring more files into view).

Use of the "paleTte" option can allow a set of drawings to be totally uniform in their colors.

It is possible to modify the color palette and save an empty drawing sheet with the intention of only saving the color scheme. Using the "**save As**" option, one could save different color palettes, such as sixteen shades of blue, that would be ready for future use.

Pan

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

VIEW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

"**Pan**" allows the user to "pan", or move the design around within the current *working area*.

When "**Pan**" is selected, the program prompts, "*Pick the reference point*". Click the mouse on any reference point. Then, pick a new reference point. A small indicator line will follow the pointer until the mouse button has been pressed. The reference point will shift to the new location, adjusting the view within the current viewing window.

"**Pan**" is also represented by the speed button {↑}, 3rd from the right.

Pattern graph

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

PRINT

| Command | Menu | Procedure & Explanation |
|----------------|-------------|------------------------------------|
|----------------|-------------|------------------------------------|

Print the design so that graphic legends represent their matching colors in the pattern.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Polygon

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Draw a polygon (a filled figure of three or more sides). **GridCraft™** will draw the figure with sides of equal length.

First, the user will be asked to specify the number of sides. Type the number, and press <Enter>.

Next, the center point must be marked as the prompt requests, "*Pick the polygon center point*". Move the pointer (or the cursor keys) and press <Enter> or the left mouse button.

Finally, one of the side vertices must be marked as the program prompts, "*Pick a point on the polygon*". Move the pointer, and press the left mouse button.

A regular polygon (in the selected color) will be drawn.

Press <Esc> or the right mouse button when you no longer want to draw polygons.

Print

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

MAIN

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Send a design to a printer, using one of several available formats.

If a full design with symbols marking each color is wanted, then "**P**attern gr" [Pattern Graphic] would be chosen.

If the user wants a print out of row and column data, "**R**ow/**c**olumn" would be chosen.

A Block graph "**B**lock graph" could be selected to print so that all colors are represented only with a solid block.

For convenience, a "**H**ader graph", or small banner of the entire design may also be printed. Header grids provide a handy visual reminder of the pattern, especially when row and column data has been printed.

The "color **F**ilter" option lets you select colors that should be ignored, or filtered out, in the printing operation.

Prompts

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Enable or disable help prompts displayed at the top of the screen. The purpose of disabling **P**rompts would be to suppress *edit list* displays during editing, thereby speeding up the editing process.

When the happy face in the speed button row {☺} is smiling, there will be a high degree of help messages. Disabling the prompts switch (clicking the mouse on the speed button and making the happy face lose his smile) allows experienced users to perform functions quickly without using the higher prompting level.

Quit

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

MAIN

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Selecting "Quit" from the MAIN MENU indicates that you want to terminate the use of *GridCraft*[™].

A warning message, "*Quitting will not save this work*" always appears.

Make sure that you have saved your work before quitting, then select, "*Quit anyway!*".

r/C merge
[row/Column merge]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Merge a drawing into the current drawing from a file containing row and column data.

R/c load

[**R**ow/column load]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Load a design from a file containing row and column data.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Rectangle

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Draw rectangles by specifying two corners.

A prompting message will inform, "*Pick the first corner*". Move the double pointer immediately to the desired location, and press the left, select button, or the <Enter> key.

In response to the second prompt, "*Pick the second corner*", move the pointer to the opposite corner. A small line will show where the rectangle will appear.

Press the select button a second time to complete the rectangle. The right mouse button, or <Esc> key would terminate the process before a rectangle is entered into the working grid.

Redraw

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

VIEW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Refresh the drawing area to clean up minor inconsistencies that may occur during editing.

Redraw is also represented with the speed button, {!!}.

Resize drawing

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Resize the drawing sheet to a specified number of rows and columns.

It is a good practice to save your work before resizing.

You will be prompted to enter the number of rows and columns for your design. Type the desired numbers, and press <Enter>.

A prompt appears asking, "*Merge old sheet into new?*". The available choices are "**Ok!**" and "**Start fresh**".

If a design is already in progress, the choice "Ok!" will merge the design (or, at least as much of the design as will fit) into the size of the new grid work sheet.

"Start fresh" totally clears the working area, and begins the design process with a new grid sheet size.

Any drawing can be merged into any size grid sheet, although if the drawing is larger than the sheet size, some information may be ignored (lost).

Drawings are loaded beginning at the lower left-hand corner of the sheet. If a drawing is higher or wider than the sheet size, parts of the drawing to the right or above the top of the sheet would be ignored.

The maximum size for a drawing on a typical system is approximately 100,000 grid points (such as a square sheet with up to 300 rows by 300 columns or 1200 rows by 80 columns).

roTate

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Rotate the grid squares in the current *edit list* by a specified angle.

If the *cOpies* switch is on {o}, the rotated image plus the original grid squares will remain in the design. If the *copies* switch is off {o}, the rotation will be "in place of", rather than "in addition to" the image.

When you select "roTate", you are prompted to, "*Pick the pivot point*".

The "*pivot point*" is the one spot that will stay stationary. Choose the point with the mouse or cursor, and press the left mouse button or the <Enter> key.

Next, appears the prompt, "*Pick the first ROTATE reference point*". Select a point that you want to "grab" and rotate. Then, "*Pick the second ROTATE reference point*".

A line segment follows the pointer from the original "pivot point" to the reference point's new location. Press the select button or key.

A shaded image is shown where the new image will appear. Press the left mouse button to "OK" the procedure when the shaded image is in the correct location.

Row/column

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

PRINT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Print row and column data, as is appropriate for certain crafts, such as weaving. Refer to figure 1-11 for an example.

save **As**

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Save the design to disk while giving it a new file name. When prompted to provide a new file name, you may give it any name with up to eleven characters (up to eight letters in the main body of the file name plus up to three characters in the *extension* that follows a period).

Example: GREAT.WRK.

save **P**art

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Save a section of the current design to disk.

When you select "save **P**art" you are prompted to, "*Pick the first corner of area to save*". Move the cursor to a desired location and press the left mouse button. Then, you are prompted to, "*Pick the opposite corner*". Move the pointer so that the indicator box covers the portion of the design that should be saved, and, again, press the left mouse button.

The program will prompt for you to, "*Enter drawing name*". Assign the portion a file name (up to eight characters followed by up to three characters in the extension, such as, "GOOD.PRT"), and press <Enter>.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Save draw
[Save drawing]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

FILE

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Save the design to disk using the currently specified file name (the file name is displayed on the top left corner of the status bar).

Scale

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

EDIT

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Scales (enlarges or shrinks) items in the *edit list*.

Whatever items have been included in the *edit list*, through the use of "list **A**dd" may be scaled.

The first step is to choose a "stationary point", or reference point in the design. Move the pointer and press the left mouse button.

Next, the program prompts, "*Pick the handle point*", a point in the design that you would like to "grab" and "pull" toward, or away from, the reference point. Again, click the left mouse button on the select point.

Finally, you will be prompted, "*Pick the new handle location point*". Move the pointer, and press the select button.

Notes:

Save your work before using the "**S**cale" option.

The status of the copies switch (the sixth speed button from the left, {o.}), determines whether the original design in the *edit list* remains, or is replaced by the scaled design.

When scaling a design to a larger size, editing will probably be required to complete blank grid squares.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

set-Up

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

MAIN

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Set program configurations and preferences.

GridCraft[™] can be customized to suit a wide variety of needs and crafts. Whatever preferences are normally used may be saved by using the "**Keep setup**" option.

Existing drawings, or a new grid sheet may be defined with the "**Resize drawing**" command.

The color palette and printed color legends and names may be altered using "**Mod(ify) colors**", "**swap Patr**n", and "**Color name**" options.

File names can be changed on the fly using the "**File name**" option.

Printer preferences may be set with "**Output set**" while digitizing tablets may be calibrated with the "**Tablet**" option.

Color backgrounds for the drawing window (big) and viewing window (small) may be set with "**Sml bckgnd**" and "**Big bckgnd**".

Selecting "**Aspect ration**" even allows a user to customize the size and shape of the actual grid rectangles of the screen.

Sml bckgnd
[Small background]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Change the background color of the small, viewing window in the lower left-hand corner of the screen.

After selecting "**S**ml bckgnd", a palette of sixteen colors will appear. Move your pointer to the desired viewing window color background, and press the select mouse button on the preferred color.

Background colors used in the display are not part of the drawing, so the print out of the design will not be affected by changing the background displays.

swap **P**atrn
[swap **P**attern]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The SET-UP option, "swap **Patrn**" works exactly the same as "**S**wap patrⁿ" in the SWITCHES menu.

Each of the sixteen colors in the current color palette can be matched with any of sixteen available patterns for coding patten printouts. Selecting **swap Patrⁿ** will display the patterns that will be printed to represent each color.

To change the symbols that will be printed, move the spider to a symbols that you want to swap, press and hold the left mouse button, and move the pointer to another color symbol. When the mouse button is released, the two symbol patterns will have been switched.

If you want the changes made in "swap **Patrn**" to be saved permanently, use the "**K**keep setup" option.

Swap patrⁿ
 [**S**wap pattern]

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Allows different graphic designs to be matched with any of the sixteen available colors for printing purposes.

When "**S**wap pattern" has been selected, each of the current sixteen colors, along with the symbol that will be printed to represent each color will be displayed.

To switch the normal, or "default" symbols, move the spider pointer to one of the color symbols that you want change, press the left mouse button, and while holding it down, move to another color location and release the button. The symbols will be switched between the selected colors.

Press the <esc> or right mouse button to terminate color pattern symbol switching.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Switches

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

MAIN

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Global settings that affect program operations.

Switch options include "grid **L**ines", "**C**olor", "**T**racking", "c**O**pies", "**P**rompts", "color **F**ilters", "**S**wap pattern", "**E**dit pattern", "**D**isk print", and "**N**umber direction".

Several "**S**witch" options are also represented with "speed buttons".

Tablet

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SET-UP

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Sophisticated pointing devices, called tablets, may be calibrated for use with *GridCraft*[™].

Tablets provide more precise pointing and drawing capabilities than do mice. *GridCraft*[™] supports tablets by providing the "Tablet" option to calibrate the devices using Microsoft[™] mouse calls in "absolute" tablet mode.

Prompts to select the corners to digitize, and to specify the number of rows and columns ensures that the program and tablet are properly synchronized.

Text

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

DRAW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The text option allows for construction of letters and characters that will be placed in a design.

Each letter is composed within an 8 x 8 grid pattern.

When selecting "**T**ext", the program will prompt "*Pick the text start location...*". Align the cross-hair pointer to where the bottom left corner of the first letter should appear, and press <Enter> of the left mouse button.

Next will be a block prompting, "*Enter the text:*". Type the desired text (you may use capital and lowercase letters), and press <Enter>.

Letters and text may be repositioned by using the EDIT function "**M**ove".

If the size of the lettering needs to be adjusted, the companion program "GCRESIZE" (demonstrated in Lesson 4) may be used.

Tracking

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

SWITCHES

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

The "Tracking" switch affects how squares in the *edit list* are placed on the drawing sheet during editing operations.

If the tracking switch is on (shown in the speed button row with {σ}), you can reposition the shaded areas of the edit list by moving the mouse or arrow keys. Tracking can be awkward when moving a large group with the mouse because of the time it takes to redraw the highlighted group in a new location.

The current tracking setting is displayed on the speed button row with "σ" (tracking on) or "φ" (tracking off).

View

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

MAIN

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

View options make it more convenient to work with your designs by allowing you to change the way information is displayed on the screen. **View** allows you to "*Zoom in*" to magnify a detailed area, or change the location of where you are working in the drawing. You can "*Pan*" from one area to another, re-set the view to "*Full*", or return to the beginning, "*Base*" view. The "*faCtor*" command allows the view to be increased or decreased by the specified percentage. "*Redraw*" refreshes the screen.

Options within the VIEW MENU change only how the drawing sheet is displayed. The actual drawing or design does not change as a result of changes in viewing perspective.

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

Zoom in

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

VIEW

| Command | Menu | Procedure & Explanation |
|---------|------|-------------------------|
|---------|------|-------------------------|

"**Zoom in**" magnifies a specified area of the drawing sheet.

The **Zoom in** feature is also available through the use of a "speed key", the [↔] icon in the speed button row (fourth from the right)

When you select "**Zoom in**", you are prompted to pick the upper left and lower right corners of the area to be zoomed.

Note: it is also possible to "zoom" into areas that have previously been magnified.

Appendix A: Using Directories for Unique Designs

Overview

GridCraft[™] saves your preferences in a file named, "GRID.CFG" whenever "**Keep setup**" is selected from the SETUP Menu. These preferences become the *default* values that the program will use. Included in the information saved are:

- ▶ Standard drawing sheet size
 SETUP - **R**esize drawing
- ▶ Grid aspect ration (grid block height to width)
 SETUP - **A**spect ratio
- ▶ Standard color palette
 SETUP - **M**odify colors
- ▶ Color patter legends
 SETUP - **C**olor name
- ▶ Standard printer width
 SETUP - **O**utput set
- ▶ Background colors of working and viewing windows
 SETUP - **S**mall background & **B**ig background

When working with different crafts, or projects with vastly different setup preferences, placing the drawing files in different **directories** will allow different "GRID.CFG" files, and therefore, different preferences to be stored.

For example, someone may want to keep latch hook rug files and preferences in a directory area called C:\RUG, scarves in an area C:\SCARVES and beadwork in C:\BEADS.

Making a directory

Use the computer's DOS (Disk Operating System) to make a directory. These instructions assume that you are at the DOS Ready prompt, such as

C:\>

► If you are in a DOSSHELL, or other menu system, select an option to "Exit to DOS".

In these instructions, you will type only what appears in **BOLD** type.

The computer's prompts will also be shown, but will not be bold.

Note that in working with directories, the backslash key <\>, and not the slash key is the one to use.

Think of an appropriate directory name.

► File names are limited to eight characters and, optionally, may be followed by a period and an extension of three characters. No spaces are allowed in a directory name.

The example will use the directory name "BEADS".

To make a new directory type

MD\BEADS

and press the <Enter> key

You may make as many different directories as you will need using this method.

Changing into the directory

In order to change into the directory that you created, you may type

CD\BEADS

and press <Enter>

The computer's DOS ready prompt should look like

C:\BEADS>

► If your computer screen does not look like that, type the command

PROMPT \$P\$G

and press <Enter>

Technical (DOS) requirements

If you begin the program from different directory areas on the computer's hard disk, you must give the computer a way to find the **GridCraft**[™] program.

One way to start the **GridCraft**[™] program from another directory would be (rather than starting the program by typing **GCRAFT** and <Enter>) to specify both the GridCraft directory and the program name.

Example:

```
C:\BEADS>\GCRAFT\GCRAFT
```

and press the <Enter> key

► The example above assumes that you did not change the default values of the **GridCraft**[™] Installation program.

If you did put the **GridCraft**[™] program files into another directory, replace that directory name for the first "GCRAFT" in the example above.

The program will begin. All files in this example would be saved to the C:\BEADS directory, and preferences stored in the "GRID.CFG" file would also be saved in this directory when the "Keep setup" option in the SETUP Menu in **GridCraft**[™] is used.

Any time in the future you want to work with your BEAD drawings, following this startup procedure:

```
CD\BEADS
```

and press <Enter>

Then type

```
\GCRAFT\GCRAFT
```

and press <Enter>

Changing the computer's PATH

Another way to let your computer find the **GridCraft**[™] program files is to add the **GridCraft** directory to the computer's search path.

If you change the path once, it would then be possible in all future uses of **GridCraft**[™] to start the program from any directory by typing the **GCRAFT** command.

Warning: If you are not familiar with computers, it would be safer to have someone who is familiar with DOS to make the following change.

There is a "batch" file in the root directory of the hard disk that automatically executes when the computer begins. That file is called "AUTOEXEC.BAT". That is the file that must be modified to include the **GridCraft**[™] area in the computer's search path.

First of all, make sure that you are in the root directory by typing

```
CD\  
and press <Enter>
```

The DOS ready prompt should look like

```
C:\>
```

Type

```
EDLIN AUTOEXEC.BAT  
and press <Enter>
```

You should see

```
End of input file  
*
```

▶ If, instead, you got a "Bad command or file name" message, the computer's DOS files are not in the search path, and you will need more help.

▶ If, instead of the "End of input file" message, you got a "New file" message, press the **Q** key and <Enter> to quit the editing procedure.

If you have the proper "End of input file" message, type

```
L  
and press <Enter>
```

The list of lines in your autoexec.bat file will be listed.

Look to find the number of the line that begins with the word "path".

Type the number of that line, and press <Enter>. For example, if the line that contains the path statement is line number 8, type

8

and press <Enter>

The line will appear on screen. Immediately below the full line will be the line number followed by an asterisk.

Example:

```
8:*path c:\dos;c:\wp51;c:\
8:*
```

Press the function key

<F3>

► Note: function keys are single keys, usually on the top of the computer. The function key <F3> is a special key for performing special function (in this case, going to the end of the current command line). Do not try to type the <F> key, and then the <3> key.

The line will be duplicated and the cursor will be at the end of the second line.

Example:

```
8:*path c:\dos;c:\wp51;c:\
8:*path c:\dos;c:\wp51;c:\
```

Begin typing, where the cursor is, with a semicolon (;) to add the **GridCraft** area to the path.

```
;C:\GCRAFT
```

and press <Enter>

► The example above assumes that you did not change the default values of the **GridCraft**[™] Installation program.

If you did install **GridCraft**[™] program files into another drive or directory, replace that drive and directory name for C:\GCRAFT in the sample above.

Your screen will now be showing only a lone asterisk (*).

If you are confident that you have followed this instructions properly, press

E

and press <Enter>

to exit from the EDLIN program and save your modifications.

► If you are not sure that you have followed the steps, or if you encountered unexpected problems, press

Q

and press <Enter>

to quit the edit. Answer the "Abort edit (Y/N)?" prompt with "Y".

If you have successfully changed your autoexec.bat file to include the **GridCraft**[™] program files in the path, you must now *Reboot* your computer in order for the changes to take effect.

You may reboot your computer by turning it off and then on, or you may press <Ctrl> <Alt> and all at the same time. Starting **GridCraft**[™] after the path has been changed

If you changed the path statement, your computer will automatically find the **GridCraft**[™] program files any time you ask for them.

Starting the program and using different directories would follow this pattern (using the sample directory name "BEADS" for illustrative purposes).

CD\BEADS

and press <Enter>

GCRAFT

and press <Enter>

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