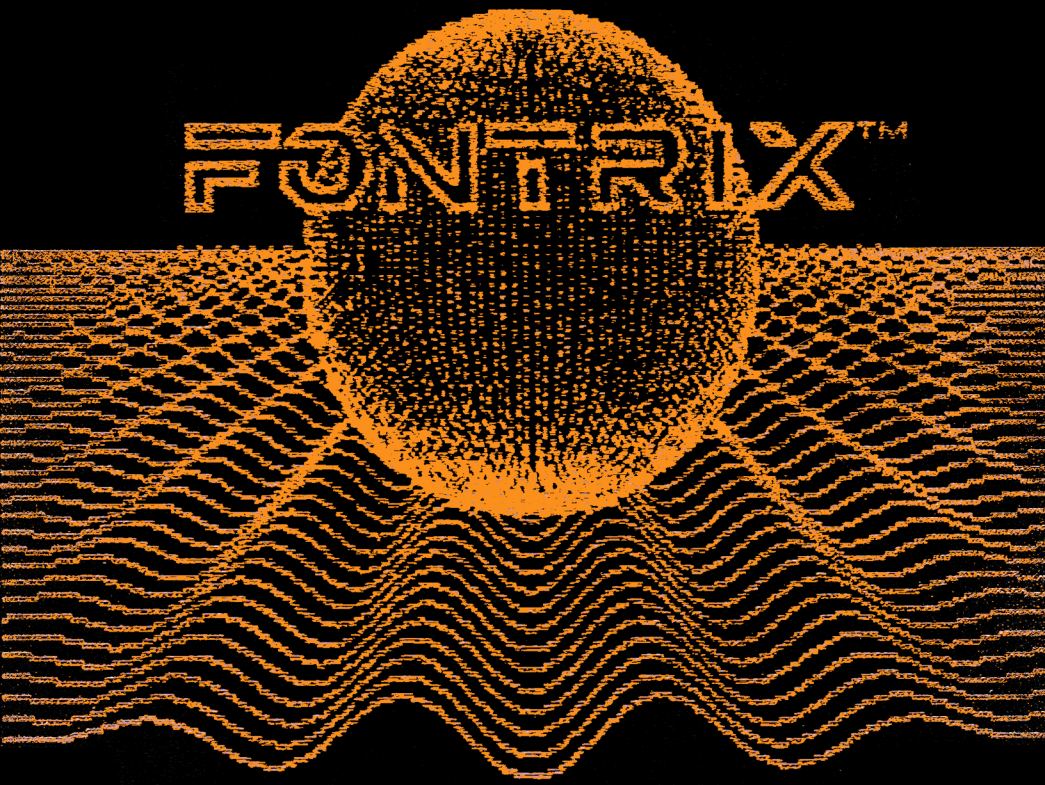
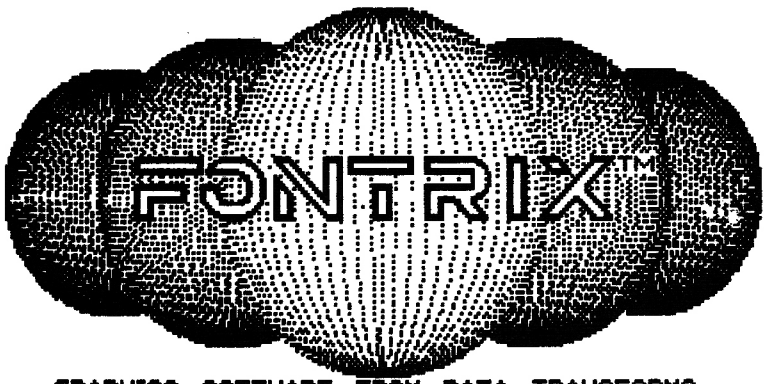

FONTRIX™



GRAPHICS SOFTWARE FROM DATA TRANSFORMS
"DEDICATED TO THE ABSENCE OF LIMITS"

Version 1.5

For use with Apple
II+, //e, and //c computers.

FONTRIX™

USER MANUAL

Version 1.5

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Special Thanks to:

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Nancy Collins
Bob Cook
Greg Gazmer
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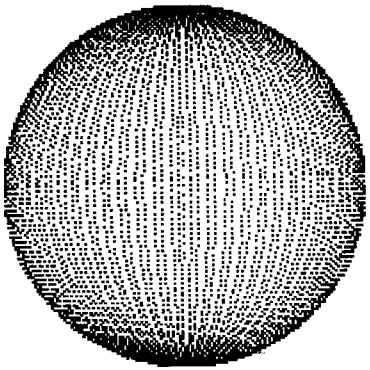
and Son
Jack McArdle
Marilynne Ramsey
and Randy Thompson

for their kind assistance in beta testing this program... and their helpful criticisms of the manual.



PREFACE

WHAT IS FONTRIX?

WHAT IS FONTRIX?

First of all, what kind of name is FONTRIX, anyway?

A FONT is a type-face, or style of lettering. FONTRIX has eleven fonts, all ready to use.

And the TRIX are:

- **You can easily create more**
- **You can WRITE with them ON HIGH RESOLUTION GRAPHICS**
- **You can make GRAPHICS 16 TIMES LARGER than the Apple screen**
- **You can PRINT them as HARD COPY**

FONTRIX is actually quite a few things...

It's a character generator,
A drawing board,
A color painting system,
A typesetting device,

A means of combining the printed word with oodles of graphics on a screen large enough to fill an entire printed page...it's more than that even...it's an exercise in imagination. Create a use to suit your needs.

FONTRIX's multi-purpose graphics are built around three main components...

THE FONT EDITOR, from which character sets are created.

THE GRAPHIC WRITER, from which the FONT EDITOR sets may be used to write on either single screen graphics or extended screen graphic files - GRAFFILES.

THE GRAPHICS DUMP, which prints graphics and GRAFFILES on over 20 different printers.

SELF-RUNNING DEMONSTRATION

FONTRIX has an autonomous, self-running Introduction & Demonstration program on board. To watch it run, boot the disk. The DEMONSTRATION will come up automatically unless the disk has already been CONFIGURED - that is, had its host hardware specified.

If it has been configured, you'll see the SYSTEMS MENU on your monitor screen. Choose INTRODUCTION & DEMONSTRATION by pressing (I) and then (RETURN). Get out the popcorn and, sit back and relax.

TRY IT YOURSELF

When the outer limits of the INTRODUCTION & DEMONSTRATION have returned control of your set to you, you might want to explore a little yourself.

Choose GRAPHIC WRITER from the SYSTEMS menu by pressing (G) and then (RETURN). Your drive will fizz and whirr a moment, and then you'll see the GRAPHIC WRITER menu on screen. We'll load a different font than ASCII, which you'll notice is the font currently in memory according to the information directory (located just above the menu options).

To load a font, enter (F) and then (RETURN). The CHOOSE FONT option will materialize. You'll be asked for the parameters (slot, drive and volume) of the disk that contains the font sets. They're on the FONTRIX SYSTEMS disk, so press (RETURN) three times to accept all three default parameters. Next you'll be asked for the name of the font. Let's load OLD ENGLISH.

Type in (OLD ENGLISH) and (RETURN). The screen will clear, FONTRIX will look for SET.OLD ENGLISH, find it, and ask "THIS ONE?". Answer (Y) (RETURN), for yes, and OLD ENGLISH will be loaded into memory. You'll see the GRAPHIC WRITER menu back on your screen. The directory should now show OLD ENGLISH as the current font in memory.

Now let's go into option W, WRITE ON A GRAPHIC. Press (W) (RETURN). The menu will vanish again, and you'll see a list of command keys accessable from WRITE ON A GRAPHIC. Don't worry about remembering them all right now. They'll be covered in depth later in chapter 2.

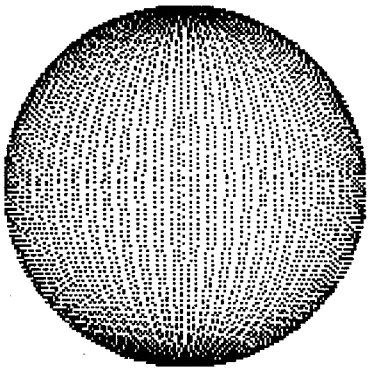
A flashing cursor urges you to "Press any key to continue"...so, press a key, and let's see what's on the other side of that list. If you've just run the INTRODUCTION & DEMONSTRATION program, you'll probably recognize the graphic image that has just appeared...if you haven't just run INTRO & DEMO, chances are you're staring at a chaotic miasma of jumbled dots. In either case, press (CTRL) (E) to erase, and we'll start with a fresh screen.

Try typing the name of your fifth grade teacher. You can access the lowercase type by pressing (CTRL) (C), or letting the caps lock key up if you have an Apple //e. How's it look in old english print?

Let's leave ye olde teachere by pressing (CTRL) (Q), which brings the GRAPHIC WRITER menu up again. Press (Q) (RETURN) to get back to the SYSTEMS MENU again.

The old english characters you were writing with were made with FONTRIX'S FONT EDITOR (See chapter 4).

TABLE OF CONTENTS



INTRODUCTION
THIS MANUAL

THIS MANUAL
-OR-
DO I HAVE TO READ IT ALL?

THE FAST TRACK

(FOR EXPERIENCED PROGRAMMERS)

If you want to just DO and not READ, this may be the fastest way through this manual:

1) Boot the FONTRIX systems disk. The Demonstration program will run automatically, after which you will need to define your hardware configuration the first time through...thereafter you must go to NEW CONFIGURATION, only if you change hardware. Booting, or (RUN FONTRIX) will give you the SYSTEMS MENU.

2) Look into the specifics of your printer in Appendix B.

3) Font sets are created from the FONT EDITOR. Larger than screen graphics, GRAFFILES, are created from the GRAPHIC WRITER. Refer to chapters 2 and 4 as necessary for more information on these.

4) Use the INDEX and Table of Contents as a reference for specific information.

FOR ALL THE REST OF US

We really recommend you read the whole manual. FONTRIX is a very versatile tool, and we'd like you to be able to have its full power at your command. Chapter 1 tells what you'll need to start your trip into the FONTRIX system. The next few chapters of the TRAVEL GUIDE will explore all the different regions of the FONTRIX system. Finally, the section called FONTRIX FLORA AND FAUNA will discuss in detail the indiginous wildlife encountered in the TRAVEL GUIDE.

THIS MANUAL AS A TUTORIAL

The manual may be used as a tutorial by reading through chapter by chapter. Pay special attention to the EXPLORATORY TRIP sections as they appear. They'll take you into the more complicated regions and show you around. The three chapters comprising the section called FONTRIX FLORA & FAUNA should give you a good idea as to what FONT sets and GRAFFILES are, and how to work with them.

...AS A REFERENCE MANUAL

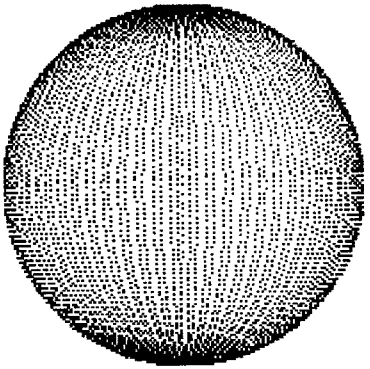
By using the INDEX and TABLE OF CONTENTS to look up specifics, you can often times go straight to the section that you need. Information in the TRAVEL GUIDE section of the manual is packaged into blocks by function. The APPENDICES contain many look-up tables and defaults you may need to know, as well as trouble-shooting techniques grouped by region.

NUTS AND BOLTS

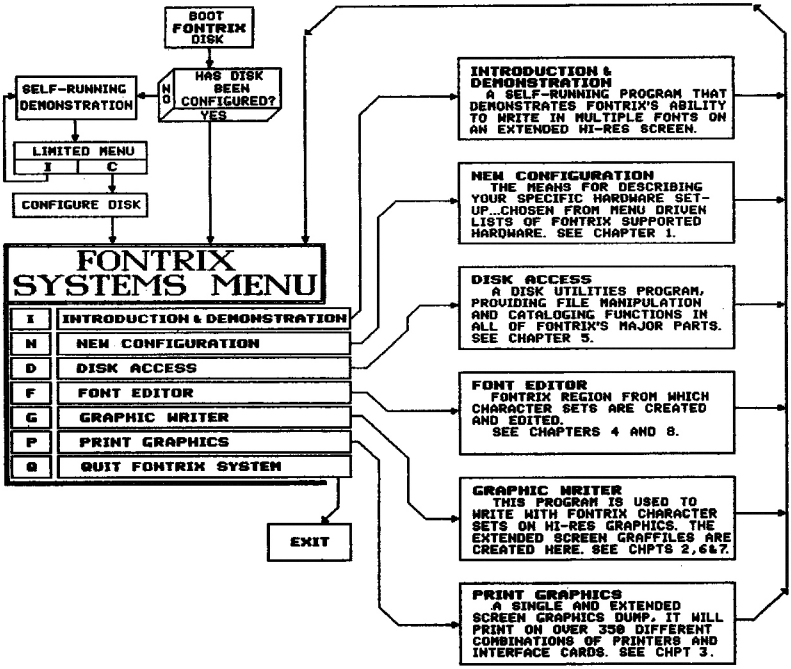
The text of this manual was written with the Apple Writer text editing system, and printed with the GRAPHTRIX text embedded graphics program on an Okidata 84 dot matrix printer.

All graphics, flowcharts and illustrations were created using the FONTRIX GRAPHIC WRITER, and printed by FONTRIX'S GRAPHIC DUMP on the Epson MX-100, Okidata 84, and Apple DMP dot matrix printers.

Special fonts were created with FONTRIX'S FONT EDITOR section, and typeset with the GRAPHIC WRITER.



CHAPTER 1
STARTING UP


BOOT FONTRIX DISK
HAS DISK BEEN CONFIGURED?
NO
YES
SELF-RUNNING DEMONSTRATION
LIMITED MENU
I
C
CONFIGURE DISK
FONTRIX SYSTEMS MENU
I INTRODUCTION & DEMONSTRATION
N NEW CONFIGURATION
D DISK ACCESS
F FONT EDITOR
G GRAPHIC WRITER
P PRINT GRAPHICS
Q QUIT FONTRIX SYSTEM
EXIT
INTRODUCTION & DEMONSTRATION
A SELF-RUNNING PROGRAM THAT DEMONSTRATES FONTRIX'S ABILITY TO WRITE IN MULTIPLE FONTS ON AN EXTENDED HI-RES SCREEN.
NEW CONFIGURATION
THE MEANS FOR DESCRIBING YOUR SPECIFIC HARDWARE SET-UP...CHOSEN FROM MENU DRIVEN LISTS OF FONTRIX SUPPORTED HARDWARE. SEE CHAPTER 1.
DISK ACCESS
A DISK UTILITIES PROGRAM, PROVIDING FILE MANIPULATION AND CATALOGING FUNCTIONS IN ALL OF FONTRIX'S MAJOR PARTS. SEE CHAPTER 5.
FONT EDITOR
FONTRIX REGION FROM WHICH CHARACTER SETS ARE CREATED AND EDITED.
SEE CHAPTERS 4 AND 8.
GRAPHIC WRITER
THIS PROGRAM IS USED TO WRITE WITH FONTRIX CHARACTER SETS ON HI-RES GRAPHICS. THE EXTENDED SCREEN GRAFFILES ARE CREATED HERE. SEE CHPTS 2,6&7.
PRINT GRAPHICS
A SINGLE AND EXTENDED SCREEN GRAPHICS DUMP. IT WILL PRINT ON OVER 350 DIFFERENT COMBINATIONS OF PRINTERS AND INTERFACE CARDS. SEE CHPT 3.

- CHAPTER 1 -

STARTING UP

FIRST THINGS FIRST

Make a back-up of the FONTRIX disk, and put it away for safe keeping. You never know when it'll come in handy - a freak magnetic storm, a puppy with an oral fixation...anonymous disk scramblers work in mysterious ways.

While you're at it, set up a couple of blank disks. Initialize them, and keep them handy to receive new fonts, GRAFFILES and saved graphics. This is important. The FONTRIX SYSTEMS disk is completely full, and will not receive another file. If you don't have a cozy disk ready when you need it, you'll wish you did.

CONFIGURING THE DISK

The first time you boot the FONTRIX disk, the DEMONSTRATION program will automatically run, after which the following screen will appear on your monitor...

```
 FONTRIX 1.0          SYSTEMS MENU

....CONFIGURATION.....................

     CARD: YOUR CARD
     SLOT: YOUR CARD'S SLOT
  PRINTER: YOUR PRINTER
GR INPUT: YOUR GRAPHIC INPUT
.....................................

<I>  INTRODUCTION & DEMONSTRATION
<N>  NEW CONFIGURATION
<D>  DISK ACCESS
<F>  FONT EDITOR
<G>  GRAPHIC WRITER
<P>  PRINT GRAPHICS
<Q>  QUIT FONTRIX SYSTEM

ENTER CHOICE: ■
```

This is the SYSTEMS MENU, your passport to the FONTRIX regions. You'll have to configure the disk to the specific hardware it is to run with in order to access the rest of the system. Thereafter, you'll need to reconfigure only whenever you change hardware (including graphic input sources).

Choose option (N), for NEW CONFIGURATION, and let's step through the CONFIGURATION routine.

The first question concerns which member of the Apple family you are using. Input the number corresponding to your computer hardware.

At this point, configuration paths diverge. If you responded with "II+," "///," or "Keyboard Enhancer," you will be asked the following set of questions:

1. DISPLAY TYPE. Uppercase only, or upper and lower case?

2. DISK DRIVE SLOTS. Which slot is your disk drive plugged into? If you have more than one disk drive, enter a slot number for each drive. When all drives are defined, press (RETURN) alone to move on.

3. GRAPHIC INPUT DEVICE. If you are using a mouse, joystick, tablet, or other peripheral, enter the type and the manufacturer. If you are using keyboard only, take that option.

4. GRAPHIC INPUT DEVICE SLOT. Which slot is the peripheral plugged into?

5. INTERFACE CARD. Enter the manufacturer and model of your printer interface card. (This and the following questions apply only if you are planning to print. If you are not using a printer, choose the "NONE" option for each question. This will prevent access to the GRAPHICS DUMP region of FONTRIX.)

6. INTERFACE CARD SLOT. In which slot have you put the interface card?

Note: If you should accidentally enter the slot containing your disk drive in response to this question, you may crash the FONTRIX systems disk when printing graphics. Have you made your back-up disk yet?

7. PRINTER. Enter the manufacturer and model name of your printer.

If you are using a IIe, only a few of the above questions will appear. Respond as indicated to:

1. DISK DRIVE and SLOT.

2. GRAPHIC INPUT DEVICE and SLOT.

3. INTERFACE CARD and SLOT.

4. PRINTER.

If you have the Apple //c, your questions are slightly different:

1. GRAPHIC INPUT DEVICE. No need to enter slot number, as the //c has no internal slots.

2. PRINTER/MODEM PORT. You can send FONTRIX printing data out through either the printer port or the modem port. Which port have you plugged your printer into? To find out, check the back of your //c.

3. PRINTER. Enter printer manufacturer and model.

Any time you feel you've entered the wrong information while stepping through the CONFIGURE program, you can (RESET) and type (RUN) to start over.

SOME CONVENTIONS

There are some conventions that you can rely on throughout the FONTRIX system...

The () Convention:

In this manual, when a word or letter is offset with (these) brackets, it means the word or letter is to be used as input from the keyboard. When entering it from the program, you shouldn't include the brackets.

The Q Convention:

From most every segment of FONTRIX, (Q) is used to quit, exiting from the segment to the last major menu. Departures from this convention are: in the WRITE ON A GRAPHIC option, (CTRL) (Q) is needed to quit. Whenever the message "(RETURN) ALONE EXITS" appears at the bottom of the screen, pressing the RETURN key will exit to the last menu accessed.

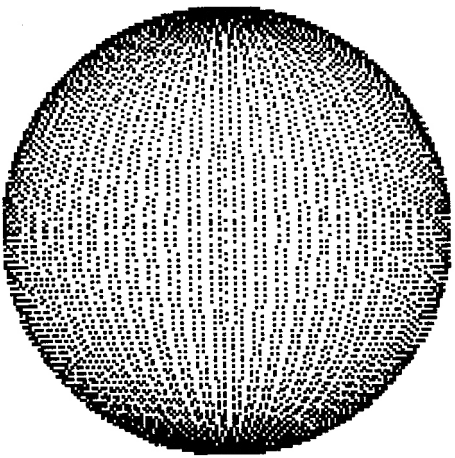
The "RUN FONTRIX" Convention:

If at any time while working with FONTRIX, you should accidentally or on purpose RESET, typing "RUN FONTRIX" will bring you back into the system at the top. (If you are using more than one disk drive, be sure to specify the correct drive - for example: RUN FONTRIX,D1). Just typing "RUN" will re-enter the segment you reset from. NOTE: It is definitely a BAD idea to RESET while working on a GRAFFILE, especially if it has never been successfully closed, for you are likely to lose not only the work put into the GRAFFILE, but the sectors it uses on disk as well. You can re-enter the FONT EDITOR from a RESET without losing the font in memory.

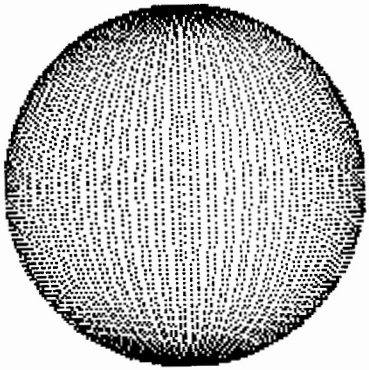
The DEFAULT Convention:

In most spots where you're asked for input of a specific nature, pressing (RETURN) alone will enter a default value. See Appendix F for a complete table of defaults. Exceptions to the Default Convention are: no defaults are given for filenames needed in disk interactions...no defaults exist for GRAFFILE sizes...no defaults exist for menu option selection.

FONTRIX

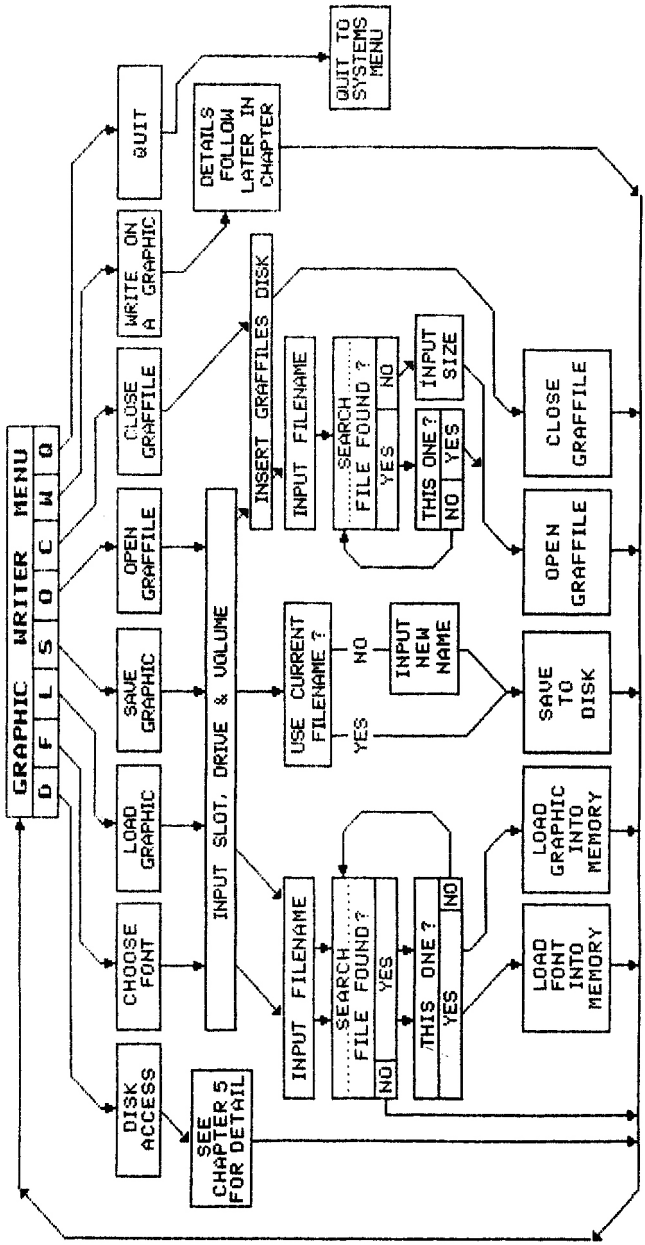


TRAVEL GUIDE



CHAPTER 2

THE GRAPHIC WRITER


GRAPHIC WRITER MENU
D F L S O C W Q
DISK ACCESS
CHOOSE FONT
LOAD GRAPHIC
SAVE GRAPHIC
OPEN GRAFFILE
CLOSE GRAFFILE
WRITE ON A GRAPHIC
QUIT
SEE CHAPTER 5 FOR DETAIL
INPUT SLOT, DRIVE & VOLUME
INPUT FILENAME
SEARCH..... FILE FOUND ?
NO
YES
THIS ONE ?
YES
NO
LOAD FONT INTO MEMORY
LOAD GRAPHIC INTO MEMORY
USE CURRENT FILENAME ?
YES
NO
INPUT NEW NAME
SAVE TO DISK
INSERT GRAFFILES DISK
INPUT FILENAME
SEARCH..... FILE FOUND ?
YES
NO
THIS ONE ?
NO
YES
INPUT SIZE
OPEN GRAFFILE
CLOSE GRAFFILE
DETAILS FOLLOW LATER IN CHAPTER
QUIT TO SYSTEMS MENU

- CHAPTER 2 -

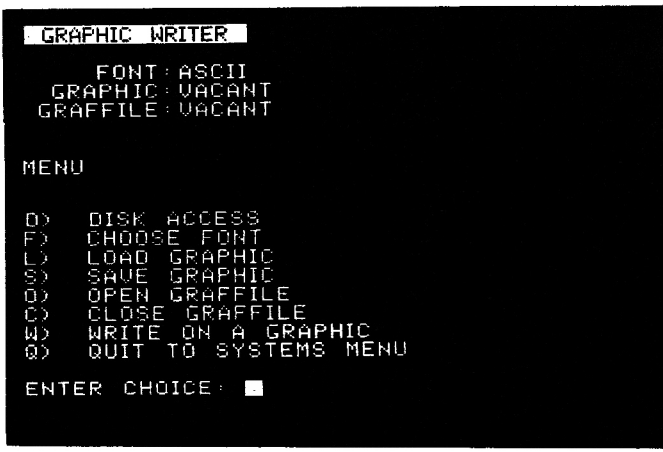
THE GRAPHIC WRITER

IN THIS SECTION...

You'll find directions for using FONTRIX character sets to write on Hi-resolution graphics, and to create new graphic images. We'll see how to create and work with FONTRIX'S extended screen graphics - the GRAFFILES.

If you'll be using one of FONTRIX'S supported graphic input devices, you'll need to have already specified it in the configure program.

Pressing (G) from the FONTRIX SYSTEMS menu has produced this screen...



This is the GRAPHIC WRITER menu. At the top of the screen is an information directory appraising you of the current residents: the font, graphic, and GRAFFILE that presently occupy space in the system. ASCII will always be present when you enter the GRAPHIC WRITER region. It will be replaced when you choose another font. The graphic will be vacant until one is loaded in, or created and named. The same applies for the GRAFFILE.

Below the directory are the GRAPHIC WRITER menu options. On the facing page is a flowchart of the GRAPHIC WRITER region

of FONTRIX. Each of its sections will be discussed later in this chapter, in the section titled: THE OPTIONS. But, now, if you'd like a guided tour of the capitol of the GRAPHIC WRITER region, please join me on a brief...

EXPLORATORY TRIP

From the SYSTEMS menu, select option (G), GRAPHIC WRITER. The SYSTEMS menu will be replaced by the GRAPHIC WRITER menu, from which we'll choose option (W). Press (W) (RETURN), and let's get right into the midst of things.

The GRAPHIC WRITER menu is falling away, and you'll now see a list of possible commands from within WRITE ON A GRAPHIC. A pretty extensive list - but for now, don't worry about remembering them, it'll all fall into place as you grow more familiar with their operations. The only ones you may want to keep in mind are (CTRL) (Q) (QUIT), which gets you back to the GRAPHIC WRITER menu, and (CTRL) (A) (ASK FOR HELP), which displays this list of commands. At the bottom of the screen, a flashing cursor urges you to press any key to continue - so let's go...

The first thing you'll see will be the current state of the Hi-res screen. If a graphic has been recently loaded in, it will now appear. Most likely though, you are now looking at randomized garbage. You can clear the screen by pressing (CTRL) (E), (ERASE).

This will leave you with a blank screen except for the cursor, which is at the top left. Try typing in a message. When the cursor reaches the right edge of the graphic screen, it will slide under, and appear to be partially cut off. Pressing (RETURN) will send it back to the left edge, one line down from its previous position.

You may be bored right now with the Old familiar ASCII character set - so it's a good time to see how to change fonts. Press (CTRL) (Q) (QUIT) and we'll return to the GRAPHIC WRITER menu. From here, choose option (F) (CHOOSE FONT). You'll be asked to enter the disk parameters one at a time. The default values shown should be correct for loading a set from the FONTRIX systems disk. You can enter them by pressing (RETURN) alone each time you're asked for input.

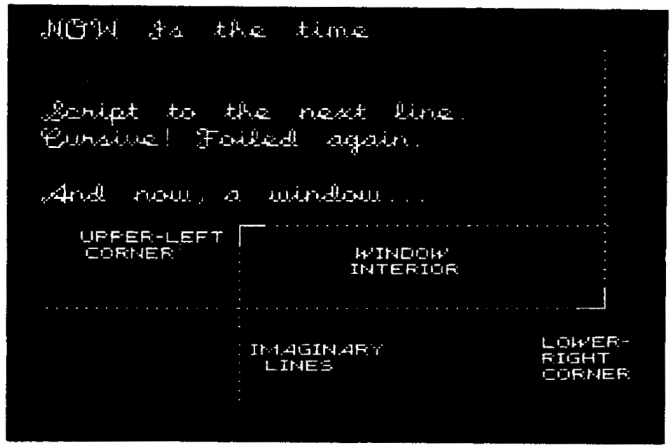
You'll now see the FILE SEARCH screen asking for the name of the font you want to load. Type in: (SC*), and then (RETURN). The screen will clear, you'll see SET.SC* at the top left as your disk drive comes alive. FONTRIX is now looking for a set that begins with the letters SC. Then, presto! - it finds SCRIPT, and now wants to know if THIS ONE is the one you want.

Answer (Y) for yes, and FONTRIX will load SET.SCRIPT into your machine, after which you'll be given the GRAPHIC WRITER menu again. Notice that the listing at the top of the menu announces SCRIPT as the current font.

Press (W), and we'll return to WRITE ON A GRAPHIC. There's the list of commands - press any key, and there's the message you typed earlier. Press (RETURN) a couple of times to move the cursor below your message. Now type a couple of words in SCRIPT. If it's all coming out in uppercase letters, press (CTRL) (C) (CAPS LOCK) and you'll be able to access the lowercase. You can switch back and forth between upper and lower using (CTRL) (C) (keyboards that have a caps lock key can use the (SHIFT) key with the caps lock key in the up position).

It still doesn't look quite right - there are spaces between the letters that don't belong in cursive type. To get rid of the spaces, press (CTRL) (S) (SPACE BETWEEN CHARACTERS), and then enter (00) to set the space increment. Now try a few more words - looks better.

Now let's put a patch of color on the screen (in black&white it will appear as a texture). First, we'll need to limit the size of the patch. We'll do that by defining a WINDOW. Press (CTRL) (W). You'll see two lines that form a right angle where your cursor was. This is the upper left corner of your window. Imaginary lines extend from the corner point and delimit the top and left borders of the window. You can move the corner around with the (I), (J), (K), (M) keys, and place it exactly. When it's where you want it, press (RETURN) to anchor it. The lower right corner will appear then. Move it in the same fashion - the imaginary lines, now defining the bottom and right borders of the window, will move with it to form a box, the interior of which is your window. (See illustration.)



When you've anchored the second corner, again by pressing (RETURN), your cursor will reappear in the upper left of what is now the window.

Move the cursor around with the arrows, the space bar, and the return key. You'll find that its movement is confined to the boundaries of your new window. Now for the color. First, press (CTRL) (B) to alert FONTRIX that you're changing background colors. To select a color, enter a number from 01 to 31 (00 is black, which is what the color has been). Finally, press (CTRL) (E), which will fill in the window with the color you chose, leaving the rest of the screen untouched.

To rescue the cursor from inside of the window, press (CTRL) (D), which defaults the window to full screen again. Experimentation will prove the cursor's freedom.

This concludes this guided tour - so feel free to stay and play awhile, or read on about the other GRAPHIC WRITER options. Remember, (CTRL) (Q) will return you to the GRAPHIC WRITER menu.

THE OPTIONS

(D) DISK ACCESS

You can read about the DISK ACCESS tool kit in Chapter 5.

(F) CHOOSE FONT

FUNCTION:

Option (F) loads FONTRIX character sets in from disk.

FORM:

CHOOSE FONT begins by asking you to input the disk parameters: slot, drive and volume. You'll then see the SEARCH screen, with its Wildcards, asking for the name of the set you want to load. If you're not yet familiar with SEARCH, you can read about it in Chapter 5.

When you've entered the name of your set, FONTRIX will look at the disk specified, and finding the set, ask you if

it's the one you wanted. Answer <Y> for yes if it is, the set will be loaded into memory, and you'll see the GRAPHIC WRITER menu waiting for your next instruction.

<L> LOAD GRAPHIC

FUNCTION:

Option <L> loads an Apple Hi-res graphic from disk.

FORM:

LOAD GRAPHIC follows the same form as option <F>, CHOOSE FONT. First, input the disk parameters. Second, input the filename of your graphic. When FONTRIX comes back from its search with a matching name, answer its query: <Y>, yes, if it has found the desired file, or <N>, no, if you want it to look again. When your graphic is found and confirmed by you, FONTRIX will show you the Hi-res page as your graphic materializes, and present you with the GRAPHIC WRITER menu again.

<S> SAVE GRAPHIC

FUNCTION:

Option <S> saves a graphic to disk.

FORM:

SAVE GRAPHIC begins by asking for the disk parameters in which the graphic is to be saved. Next, it will ask if you want to use the current filename to save your graphic. Answer <Y> if you do, and FONTRIX will transfer the graphic to hard storage. Answer <N> if you want to choose another name. You'll see a prompt asking for the new name. Once the name is entered, the SAVE function will execute, returning you to the GRAPHIC WRITER menu.

Remember, filenames must begin with a letter. Only letters, numerals and periods are legal characters. Filenames may be up to 30 characters long including spaces. After 30

characters, the name is automatically truncated. If you enter an illegal filename to save your graphic, FONTRIX will let you know.

⟨O⟩ OPEN GRAFFILE

FUNCTION:

Option ⟨O⟩ operates both to define a brand new GRAFFILE, and to open an existent one. It begins by asking for the parameters of your GRAFFILES disk.

The GRAFFILES disk should be separate from your FONTRIX systems disk, and your character set library. In the beginning, it should be blank except for a short hello program, for a GRAFFILE'S maximum size (480 sectors) will occupy almost all available space on a 5 1/4 inch floppy. Smaller GRAFFILES can be kept together on a single disk. When your disk doesn't have space to receive another GRAFFILE, FONTRIX will alert you with a DISK FULL message.

You can read more about GRAFFILES in chapter 6.

FORM:

So - input the slot, drive and volume. You'll then see the SEARCH screen asking for a filename.

OPEN A NEW GRAFFILE

If you are defining a new GRAFFILE, enter the new name. FONTRIX will search the specified disk to check for existing files of the same name. If the coast is clear, you'll be asked to input the horizontal and vertical sector sizes for your new GRAFFILE. The smallest GRAFFILE is 5 horizontal by 6 vertical, the size of a single screen, or 30 sectors total. You cannot enter a size smaller than these dimensions. The largest GRAFFILE is 480 sectors, the dimensions of which are left up to you. Remember though, horizontal not less than 5 - vertical not less than 6 - horizontal times vertical not more than 480.

When the size parameters are accepted FONTRIX will allocate space on the disk and open the new GRAFFILE. As it is opened you'll see the contents of the Hi-res screen displayed. If you do not want what you see to be included in your GRAFFILE you can delete it by pressing ⟨CTRL E⟩ when you enter the WRITE ON A GRAPHIC section of the GRAPHIC WRITER.

OPEN AN EXISTING GRAFFILE

If you are opening an already existent GRAFFILE, you may use the Wildcards or enter your filename verbatim. FONTRIX will search the disk. Finding your file, it will ask for confirmation. Answer (Y), for yes, and you'll see your GRAFFILE being loaded onto the Hi-res screen. If the file is not found, FONTRIX will assume you are opening a new GRAFFILE, and ask for size input. Press (RETURN) alone if you don't want a new file - you'll get the GRAPHIC WRITER menu back - at which point you may want to look for your file on another disk.

(C) CLOSE GRAFFILE

Function:

Option (C) closes a GRAFFILE from current operation, and saves it entirely to disk.

FORM:

In order to save what you've put into your GRAFFILE, you must close it before either leaving the GRAPHIC WRITER or opening another GRAFFILE. FONTRIX will try to prevent both if a GRAFFILE is left open.

To close a GRAFFILE, the disk it was opened on and operated from must be in the original slot and drive. When you choose option (C) from the menu, FONTRIX will ask you to insert your GRAFFILE disk in the correct drive. Press any key to continue, and the file will be closed.

(W) WRITE ON A GRAPHIC

FUNCTION:

This option enables you to use FONTRIX character sets to write on an Apple Hi-res graphic, or FONTRIX GRAFFILE.

FORM:

Entering option (W) from the GRAPHIC WRITER menu, if a GRAFFILE is currently open, will elicit a prompt asking you to insert your GRAFFILE disk, after which the following screen will appear on your monitor - If no GRAFFILE is open, the screen will appear immediately.

This is the GRAPHIC WRITER Help Screen. On it are displayed the Command Keys used to interact with your graphics. Notice that most of the Command Keys are prefaced by the letters CTRL, which means CONTROL. When accessing one of these Commands, you must hold the (CTRL) key down while depressing the accompanying Command key.

These keys allow you to set various modes and parameters from within WRITE ON A GRAPHIC. When you first enter, all of the modes and parameters are set to the defaults that are listed next to their names below. If you change a mode, the change will remain in effect until you change it again or exit to the SYSTEMS menu. (You can access other parts of the GRAPHIC WRITER without changing your changes).

Press any key to continue, and the Help Screen will be replaced by the Hi-res screen. At any time while working on the Hi-res screen you can look at the Command Key display by pressing (CTRL) (A), **ASK FOR HELP**, which puts the Help Screen back on your monitor. To return to the Hi-res screen, press any key. Now let's look at the other Command Keys and their functions one at a time.

COMMAND KEYS

⟨CTRL⟩ ⟨B⟩ BACKGROUND COLOR — DEFAULT = 00 (BLACK)

There are 32 background colors addressable from FONTRIX. They are numbered from 00 to 31 - 00 is black, 31 is white. In black and white, these colors appear as different patterns, both on the monitor screen and as printer output. For a sampler of these patterns, turn to Appendix C.

To choose a background color (or pattern) for your graphic, press ⟨CTRL⟩ ⟨B⟩ and then a TWO DIGIT number of the color you want (color 3 is 03). If you press a non-numeric key after ⟨CTRL⟩ ⟨B⟩, you will hear a beep, and the color will not change from its former value.

Immediately after re-assigning the color, nothing at all happens - but when you press ⟨CTRL⟩ ⟨E⟩ (ERASE), the screen will fill totally with your background. This also erases the screen, so choose your background color BEFORE you start to write on the screen, or see the section ⟨CTRL⟩ ⟨W⟩ to learn how to WINDOW and limit the range of erasures.

⟨CTRL⟩ ⟨C⟩ CAPS LOCK — DEFAULT = UPPERCASE

Pressing ⟨CTRL⟩ ⟨C⟩ accesses the lowercase section of your character set. To re-enter the uppercase, press ⟨CTRL⟩ ⟨C⟩ again.

⟨CTRL⟩ ⟨D⟩ DEFAULT WINDOW — DEFAULT = FULL SCREEN

Pressing ⟨CTRL⟩ ⟨D⟩ resets the WINDOW function to full screen, releasing the cursor to full movement.

⟨CTRL⟩ ⟨E⟩ ERASE SCREEN

Pressing ⟨CTRL⟩ ⟨E⟩ clears the Graphic Screen with the current background color. NOTE: THIS WILL ERASE THE ENTIRE SCREEN. See the Command Key description of ⟨CTRL⟩ ⟨W⟩, WINDOW, to learn how to limit erasures. For erasing single characters or other small areas, use the ⟨SPACE BAR⟩ in REPLACE MODE, ⟨CTRL⟩ ⟨R⟩.

When working on a GRAFFILE, ⟨CTRL⟩ ⟨E⟩ will only erase what you can see on the screen, not the entire GRAFFILE.

⟨CTRL⟩ ⟨F⟩ FOREGROUND COLOR DEFAULT = 31 (WHITE)

Using the same colors and format as Background Color, you can choose a color to write with. Press ⟨CTRL⟩ ⟨F⟩, and then the two digit number of your color. You'll then be able to write with your font in the color specified.

NOTE: The Apple screen does not map all colors in all locations, so choosing some colors may alter the appearance of your font.

⟨CTRL⟩ ⟨G⟩ GRAPHIC INPUT DEFAULT = OFF

Enables the graphic input (GRIN) device specified from the FONTRIX Configuration, I.E., joystick, tablet...etc. In Graphic Input mode, the cursor will appear as the last character accessed. The ⟨SPACE BAR⟩ and any undefined INDEX KEYS in the set will appear as the standard square cursor. In GRAPHIC INPUT MODE you can change the cursor character by pressing an INDEX KEY. The cursor character may be dropped onto the screen by pressing ⟨RETURN⟩ from the keyboard, pressing the bottom button from the joystick, pressing the pen to its down position from the tablet...etc. See Chapter 7 for information on the GRIN hardware.

You may access all of the ⟨CTRL⟩ keys while in GRAPHIC INPUT mode.

To exit GRAPHIC INPUT MODE, press ⟨CTRL⟩ ⟨G⟩ again.

⟨CTRL⟩ ⟨H⟩ BACKSPACE

(Same as left arrow)

Moves the cursor backwards (to the left) one space. The increment of the space is determined by the size of the last character accessed plus the size of the SPACE BETWEEN CHARACTERS (see ⟨CTRL⟩ ⟨S⟩). When in ⟨ESC⟩ mode, ⟨CTRL⟩ ⟨H⟩ moves the cursor one dot at a time.

⟨CTRL⟩ ⟨I⟩ INVERSE MODE DEFAULT = OFF

Prints FONTRIX character sets in inverse mode. For example, the illustration shows a character as it normally

appears on the left, and as it appears in inverse on the right...

NORMAL INVERSE

To exit Inverse Mode, press (CTRL) (N), (NORMAL).

(CTRL) (J) LINEFEED

(Same as down arrow)

Issues one linefeed, dropping the cursor down one line from its immediate position. To set the linefeed increment, see (CTRL) (L), LINEFEED SPACING.

When in (ESC) mode, (CTRL) (J) moves the cursor one dot at a time.

(CTRL) (K) REVERSE LINEFEED

(Same as up arrow)

Issues one reverse linefeed, hoisting the cursor up one line from its immediate position. To set the linefeed increment, see (CTRL) (L), LINEFEED SPACING.

When in (ESC) mode, (CTRL) (K) moves the cursor one dot at a time.

(CTRL) (L) LINEFEED SPACING DEFAULT = 02

To set the linefeed increment, press (CTRL) (L), and then a two digit number giving the amount of pixels you want between lines.

If you press a non-numeric number after (CTRL) (L), you'll hear a beep, and the linefeed spacing will remain unchanged.

(CTRL) (M) CARRIAGE RETURN

(Same as (RETURN))

Issues a linefeed and carriage return, moving the cursor down one line and to the far left of the screen. If you are

currently working on a GRAFFILE, pressing (CTRL) (M) will scroll the file, placing the cursor at its leftmost edge, one line below its previous position.

In GRAPHIC INPUT mode, pressing (CTRL) (M) (or (RETURN)) will drop the cursor character onto the screen without moving the cursor.

(CTRL) (N) NORMAL MODE DEFAULT = ON

Resets character display to normal mode, canceling inverse mode. (See (CTRL) (I), INVERSE)

(CTRL) (O) OVERLAY MODE DEFAULT = OFF

Allows non-destructive placement of a character over a background. Cancels Replace and Transparent modes (see (CTRL) (R) & (CTRL) (T)).

FOREGROUND OVER BACKGROUND YIELDS THIS.....

(CTRL) (P) POINT MODE DEFAULT = OFF

Defines the cursor to a single point (one pixel). The point assumes the current Foreground color. Point mode is useful in drawing lines, touching up a graphic, and with a Foreground color equal to the background color, for highly selective erasures.

All of the other (CTRL) keys are accessable while in POINT mode. You may change any parameter or mode.

Pressing (RETURN) while in POINT mode will drop a dot onto the screen without moving the cursor. Pressing any other non-control key will exit Point mode.

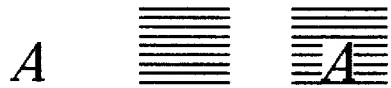
(CTRL) (Q) QUIT

Exits WRITE ON A GRAPHIC to the GRAPHIC WRITER menu.

Re-entering WRITE ON A GRAPHIC from the GRAPHIC WRITER menu will not change any of the parameters or modes in effect when you left.

⟨CTRL⟩ ⟨R⟩ REPLACE MODE DEFAULT = ON

Initiates destructive character placement. In Replace mode, dropping a character onto the screen will erase the surrounding background within the area of the character cell size to black. The size of the character cell is indicated by the cursor. Replace cancels Overlay and Transparent modes. (see ⟨CTRL⟩ ⟨O⟩ & ⟨CTRL⟩ ⟨T⟩)



FOREGROUND OVER BACKGROUND YIELDS THIS.....

⟨CTRL⟩ ⟨S⟩ SPACE BETWEEN CHARACTERS DEFAULT = 01

To set the space between characters press ⟨CTRL⟩ ⟨S⟩ and then a TWO DIGIT number indicating the number of dots you want. If you press a non-numeric key after ⟨CTRL⟩ ⟨S⟩, you'll hear a beep, and the space between characters will remain unchanged.

⟨CTRL⟩ ⟨T⟩ TRANSPARENT MODE DEFAULT = OFF

Initiates non-destructive transparent character placement. When a character is placed on the screen in Transparent mode all dots occupied by the character are reversed, so that background dots that were on are now off, and vise-versa.

FOREGROUND OVER BACKGROUND YIELDS THIS.....

Transparent mode cancels Overlay and Replace modes. (see ⟨CTRL⟩ ⟨O⟩ & ⟨CTRL⟩ ⟨R⟩).

⟨CTRL⟩ ⟨U⟩ FOREWARD SPACE

(Same as right arrow)

Advances the cursor one space forward (to the right). The space increment is determined by the size of the last character accessed plus the size of the space between characters (see ⟨CTRL⟩ ⟨S⟩).

When in ⟨ESC⟩ mode, ⟨CTRL⟩ ⟨U⟩ will move the cursor one dot at a time.

⟨CTRL⟩ ⟨V⟩ VIEWPORT

DEFAULT = OFF

Displays current Font, Graphic and GRAFFILE parameters at bottom of the Hi-res screen. Pressing ⟨CTRL⟩ ⟨V⟩ again will close the viewport.

⟨CTRL⟩ ⟨W⟩ WINDOW

DEFAULT = FULL SCREEN

Defines a smaller than screen rectangular area, limiting cursor movement to within its bounds. To set a window, press ⟨CTRL⟩ ⟨W⟩. You'll see a bracket which defines the upper-left corner of the window. This bracket may be moved to a desired spot using the cursor movement keys ((I J K M)) or the arrows. When in GRAPHIC INPUT mode, the window brackets may be moved with the current Graphic Input source (trackball, joystick, etc.).

When you have placed the bracket where you want it, anchor it by pressing the ⟨RETURN⟩ key. The lower-right corner bracket will then appear. Move and anchor it in the same way. You will have then defined the limits of your window, and your cursor will appear in the upper-left corner of the window. (No keys but the cursor movement keys and ⟨RETURN⟩ are active until you finish setting the window).

You may now erase the windowed area by pressing ⟨CTRL⟩ ⟨E⟩, without affecting the area outside, or create a patch of color by setting the background color with ⟨CTRL⟩ ⟨B⟩, and then filling the window with ⟨CTRL⟩ ⟨E⟩.

Cursor movement will be limited to within the window until ⟨CTRL⟩ ⟨D⟩ is pressed, which releases the window function and restores access to the entire graphic. Or you may redefine the window with ⟨CTRL⟩ ⟨W⟩, and exit the old boundaries.

⟨CTRL⟩ ⟨X⟩ BACKSLASH ACCESS

Accesses the backslash character space which is otherwise unreachable from the Apple II+ keyboard. Also, ⟨CTRL⟩ ⟨SHIFT⟩ ⟨M⟩ accesses the left bracket space, and ⟨CTRL⟩ ⟨SHIFT⟩ ⟨N⟩ accesses the underline.

⟨CTRL⟩ ⟨Y⟩ YANK SCREEN

Pressing ⟨CTRL⟩ ⟨Y⟩ will replace the current screen with its previous image, which is read from disk memory. (An area of a GRAFFILE is saved to disk any time it is either scrolled off screen or the GRAFFILE is closed.) This command is helpful in correcting mistakes which otherwise would be difficult to erase, by reinstating the most recently saved version of the current screen's section of your GRAFFILE.

⟨CTRL⟩ ⟨Y⟩ is neutralized when there is no GRAFFILE open.

⟨CTRL⟩ ⟨Z⟩ ZERO CURSOR

Homes the cursor to the upper-left corner of the current active window. ⟨CTRL⟩ ⟨Z⟩ will not cause a scroll in an open GRAFFILE.

⟨ESC⟩: ⟨I⟩, ⟨J⟩, ⟨K⟩, ⟨M⟩ CURSOR MOVEMENT

DEFAULT = OFF

(Same as ⟨ESC⟩ arrows on the Apple IIe)

Pressing the ⟨ESC⟩ key puts the cursor into a mode for moving one pixel at a time in any of four directions. ⟨I⟩ moves up, ⟨J⟩ moves left, ⟨K⟩ moves right, ⟨M⟩ moves down. To exit ESC mode, press any key other than ⟨I J K M⟩, ⟨CTRL⟩ ⟨J⟩, ⟨CTRL⟩ ⟨K⟩, ⟨CTRL⟩ ⟨H⟩, ⟨CTRL⟩ ⟨U⟩, or the arrows.

When in ⟨ESC⟩ mode, you cannot access any other ⟨CTRL⟩ key until you exit from ⟨ESC⟩ mode. For example, you are in ⟨ESC⟩ mode, and press ⟨CTRL⟩ ⟨Q⟩. You will not QUIT as intended; you'll merely meet the requirements for exiting ⟨ESC⟩ mode. Pressing ⟨CTRL⟩ ⟨Q⟩ again will now QUIT. If a ⟨CTRL⟩ key appears not to work, suspect that you are in ⟨ESC⟩ mode, and try the key again.

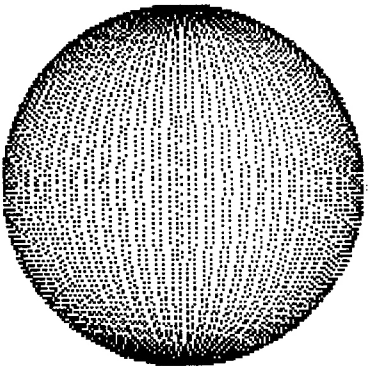
A note in passing - the GRAPHIC WRITER COMMAND KEYS work interactively. It's possible, if several are active at the same time, to get lost in the tangle. If you find yourself somewhere in Wonderland, and can't figure out where, here's a rabbit hole back to normalcy, it will always re-instate the defaults.

1. Press (RETURN) (RETURN) (CTRL) (Q) - this will get you to the GRAPHIC WRITER menu.

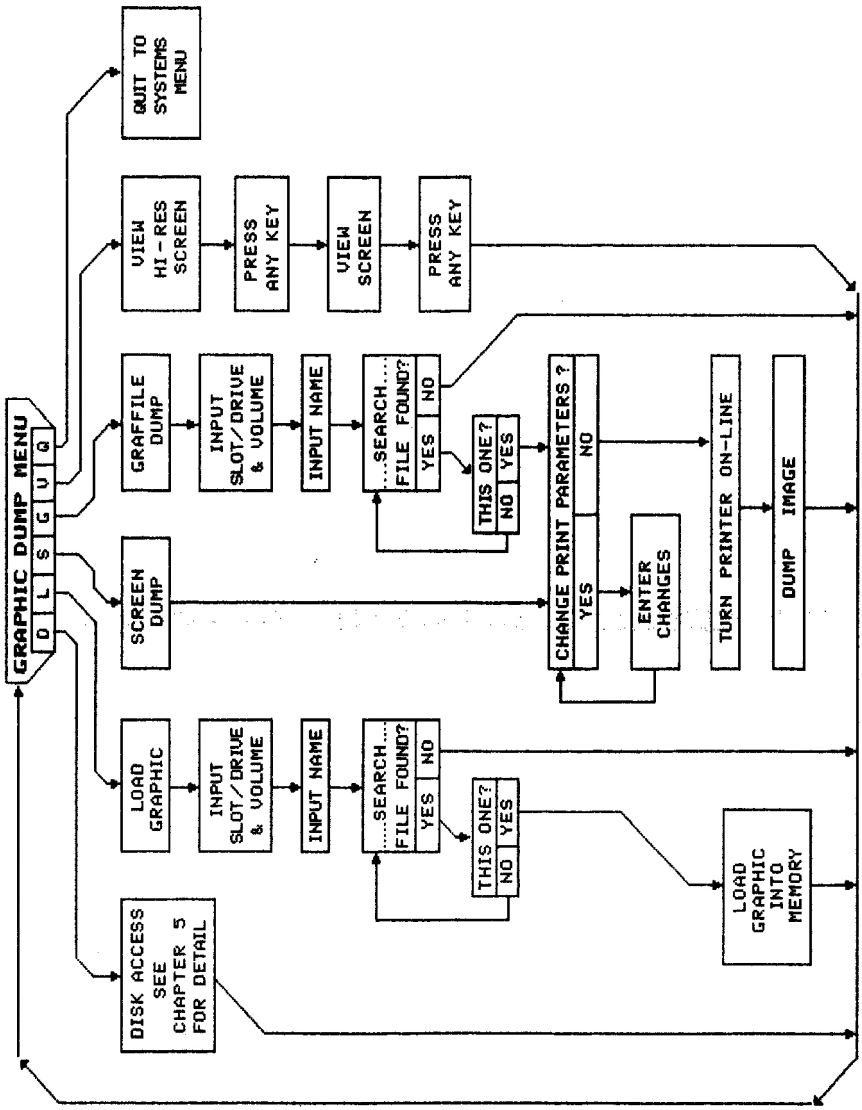
2. Press (Q) (RETURN) ((C) (RETURN) (RETURN) (Q) (RETURN) if a GRAFFILE is open) - this gets you to the SYSTEMS menu, a necessary step in retrieving those defaults.

3. Press (G) (RETURN) - to re-enter the GRAPHIC WRITER. You can now re-open your GRAFFILE, if you were working on one, and go back into WRITE ON A GRAPHIC where things will look familiar again.

Above all, don't RESET out of WRITE ON A GRAPHIC with a GRAFFILE open. You risk losing the GRAFFILE, and encountering a "phantom file" on your GRAFFILE disk. The only way to exorcise a phantom file is to FID all other files off that disk and re-initialize it.



CHAPTER 3
THE GRAPHICS DUMP


GRAPHIC DUMP MENU
D
L
S
G
U
Q
DISK ACCESS SEE CHAPTER 5 FOR DETAIL
LOAD GRAPHIC
INPUT SLOT/DRIVE & VOLUME
INPUT NAME
.....SEARCH.....
FILE FOUND?
YES
NO
THIS ONE?
NO
YES
LOAD GRAPHIC INTO MEMORY
SCREEN DUMP
CHANGE PRINT PARAMETERS ?
YES
NO
ENTER CHANGES
TURN PRINTER ON-LINE
DUMP IMAGE
GRAFFILE DUMP
INPUT SLOT/DRIVE & VOLUME
INPUT NAME
.....SEARCH.....
FILE FOUND?
YES
NO
THIS ONE?
NO
YES
VIEW HI-RES SCREEN
PRESS ANY KEY
VIEW SCREEN
PRESS ANY KEY
QUIT TO SYSTEMS MENU

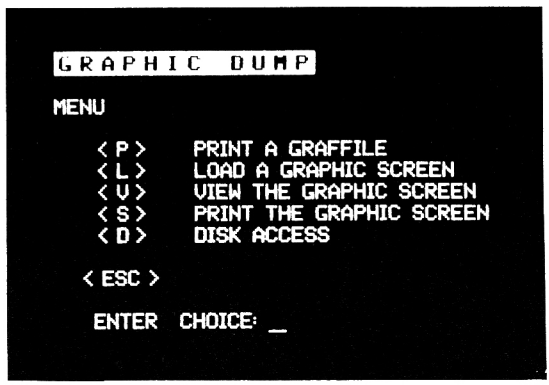
- CHAPTER 3 -

THE GRAPHICS DUMP

IN THIS SECTION...

You'll find directions for dumping your graphic screens and GRAFFILES to your printer. You should already have configured the FONTRIX systems disk to your specific hardware. If not, go to the beginning of the manual and read the section titled STARTING UP.

Entering (P) from the FONTRIX SYSTEMS menu has delivered this screen:



This is the GRAPHICS DUMP menu. We'll begin with a description of the thirteen print parameters, which allow various modifications of the graphic as created, and then we'll look at each of the options on this menu.

THE DUMP PARAMETERS

```
                                  Default value

(M)  MAGNIFICATION          HRZ: 1      VRT: 1
(I)  NEGATIVE IMAGE            : NO
(P)  PAPER WIDTH 14"           : NO
(J)  JUSTIFICATION             : CENTER
(V)  VERTICAL CENTERING        : NO
(O)  OFFSET LEFT MARGIN        : 0
(C)  COLOR/GREYSCALE           : NO
(W)  CROPPING WINDOW     LEFT: 0    RIGHT: 279
                          TOP: 0   BOTTOM: 191
(R)  90 DEGREE ROTATION        : NO
(B)  BITS/PIXEL  1 OR 2        : 1
(L)  LARGER THAN PAGE          : NO
(N)  NUMBER OF COPIES          : 1
(T)  DEFINE COLOR TABLE
```

These thirteen parameters govern the printing of both GRAFFILES and graphic screens (options P and S). In both these cases, the parameters are displayed with their default values. To change a parameter, enter its index initial (displayed to the left of the parameter). The cursor will move to the parameter value, and wait for you to input the change.

The following definitions of the individual parameters include a listing of the alternatives available with each.

(M) MAGNIFICATION HORIZONTAL & VERTICAL

FONTRIX allows independent horizontal and vertical magnifications. You can use identical higher magnifications for each parameter to produce a larger version of the image and retain the original aspect ratio. Or, by specifying different values for horizontal and vertical, you can stretch the image along one axis or the other.

A magnification value tells the program how many dots it should print on paper for each dot contained in the image. Only integer values are possible. The range of values is 1 to 99.

To change magnification values, press (M). The cursor will move to the horizontal value. Input a new number and press (RETURN), or accept the current value by pressing (RETURN). The cursor will then move to the vertical value. Follow the same procedure to change or accept this value.

NOTE: When 90 degree rotation is used, only the graphic image is rotated. Horizontal magnification still refers to the horizontal axis on the printed page. Vertical magnification still refers to the vertical axis on the printed page.

(I) NEGATIVE IMAGE

This parameter allows you to select between printing black on a white background (the default value), or white on a black background. To change this parameter, press (I) (Y) for Yes, or (I) (N) for No.

(P) PAPER WIDTH 14"

This parameter defines paper size. There are two choices: 8.5 inch, and 14 inch. To select 14 inch, press (P) (Y). To return to 8.5 inch, press (P) (N).

(J) JUSTIFICATION

This parameter is used to align your graphic image with the margins of your paper. Choices are: Left justify, which places the graphic on the left margin...Center justify, which centers the graphic horizontally...and Right justify, which places the graphic on the right margin. The default is Center. To change this parameter, press (J) (C), or (J) (R).

(V) VERTICAL CENTERING

This parameter determines whether the image is to be printed in the vertical center of the page, or started at the printhead's current vertical position.

If you intend to center your graphic image, be sure the printhead is located at Top of Form (just below the perforation).

To change this parameter, press (V) (N) or (V) (Y).

NOTE: Many printers lose Top of Form when they print graphics. Specifying vertical centering will maintain Top of Form.

(O) OFFSET LEFT MARGIN

This parameter allows you to position the left edge of the graphic image at a particular dot position on the paper. It operates in combination with Justification, so that the graphic is first positioned Left, Right, or Center, then moved the specified number of dots to the right.

To reset this value, press (O), the new number, and press (RETURN).

NOTE: Large values of this parameter, and certain combinations of OFFSET with Right or Center Justification, will result in cropping of the right side of the graphic image. If (L) LARGER THAN PAGE is set to Yes, printing will continue on the next page. If (L) LARGER THAN PAGE is set to No, printing will cease at this point.

(C) COLOR/GREYSCALE

The Apple color monitor can display up to eight colors. Graphics created in FONTRIX may contain colors 0-3; graphics created in other programs and loaded into FONTRIX for printing may contain colors 0-7. This parameter allows you to print these screen

colors as various combinations of ribbon colors, on color printers, or as different intensities of grey, on B&W printers.

The default value of this parameter is No. If the default is accepted, all graphics will print in black and white. To change it, press (C) (Y).

If this parameter is set to Yes, you may accept the default colors, or reset the screen-to-printer mapping via the parameter DEFINE COLOR TABLE.

Default colors:

Screen color		prints as	
	0		Black 1
	1		Green
	2		Violet
	3		White 1
	4		Black 2
	5		Orange
	6		Blue
	7		White 2

NOTE: This parameter interacts with parameter BITS/PIXEL. For greyscale printing, the recommended setting of BITS/PIXEL is 1. For color printing, different settings of BITS/PIXEL will affect the color fringe (a slight halo around areas of color). Experiment to achieve the effects you like best. We recommend setting BITS/PIXEL to 2.

(W) CROPPING WINDOW

This parameter allows you to print a portion of your graphic image by specifying the rows and columns of pixels at which printing will begin and end. The default values are 0 for the top and left margins, while right and bottom values are set to the size of the graphic screen or GRAFFILE you are printing.

To reset these values, press (W). The cursor will move to the default value for the left margin. Enter a new value and press (RETURN), or press (RETURN) to accept the default. The cursor will then

move to the default value for the right margin. Repeat the procedure here, and twice more for the top and bottom margins.

NOTE: If the values entered for the left and right margins result in overlap, printing is impossible. Similarly, the top and bottom margins cannot overlap.

<R> 90 DEGREE ROTATION

This parameter rotates the image 90 degrees counterclockwise on the printed page. The top-right corner of the grahic image will print in the top-left corner of the paper.

To reset this parameter, press <R> <Y> for Yes, and <R> <N> for No.

NOTE: When rotated, the aspect ratio of the graphic may change. This is due to the fact that many printers have different horizontal and vertical dot densities. A sector, which is the unit of length in FONTRIX, is 56 dots horizontally and 32 dots vertically. The actual size of the printed output will depend on the resolution of your particular printer. See Appendix B for information regarding sector size and Graffile sizing on your printer.

<B> BITS/PIXEL 1 OR 2

This parameter enables you to control the bit-to-pixel ratio of the screen map. Most graphics created on the Apple map 1 bit to each pixel. When those graphics are printed at 2 bits/pixel, they will appear to be compressed horizontally by a factor of 2.

When printing black and white graphics, you will probably prefer 1 bit/pixel. When printing color graphics, you may experiment with both settings. The differences will appear in the fringe of color around each defined color area.

To reset this parameter, press <B> <1>, or <B> <2>.

(L) LARGER THAN PAGE

This parameter allows you to print extra-wide graphic images in sections. If you choose Yes for this parameter, FONTRIX will print as much of your graphic image as it can across the first page, and resume with the next column of your image on the next page. If you choose No, FONTRIX will print as much as it can across the first page, and then quit printing.

To reset this parameter, press (L) (Y) for Yes, or (L) (N) for No.

NOTE: LARGER THAN PAGE operates in conjunction with PAPER WIDTH. Be sure to specify the correct width.

(N) NUMBER OF COPIES

Use this parameter to specify the number of copies of the current image to be printed. All copies in a multiple dump will be printed with the same parameters.

To set this parameter, press (N), enter the number of copies you wish to print, and press (RETURN).

(T) DEFINE COLOR TABLE

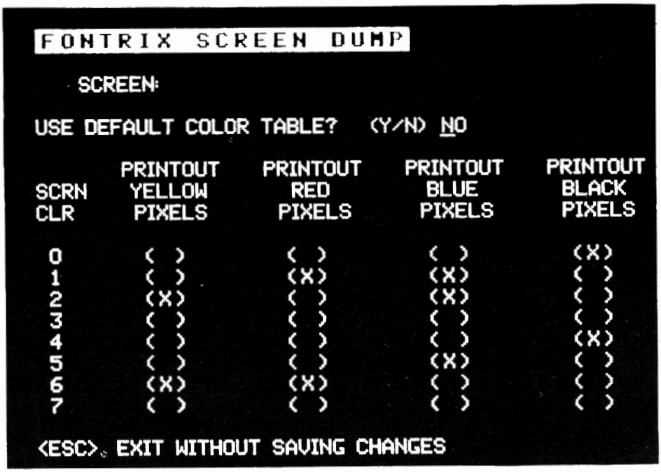
This parameter allows you to control the mapping of pixel colors on the screen to dot colors on the print-out.

Screen colors are coded electronically. When printing, each code may be set to print as any of the four ribbon colors, or as any combination of those colors. For example, color 1 may be set to print as yellow, red, blue, black, or yellow-over-blue, blue-over-red, etc.

Similarly, for greyscale printing, Color 0 may be set to print as white, Color 1 may be set to print as black, Color 2 may be set to print as blue-over-red (which is equivalent to double-striking black), and Color 3 may be set to print as

blue-over-red-over-yellow (which is equivalent to triple-striking black).

To reset the color table, press (T). You will see:



The cursor first gives you the option of matching printer colors to screen colors. This is included here to cover the special situation of returning the color table to screen values after having redefined it for previous print-outs. Without this option, you would have to match the colors manually, or leave Graphic Dump and return.

The default on this question is No. Change it by typing (Y), and you will be returned to the parameter screen. Accept the default by pressing (RETURN), and the cursor will move to the color table.

In the color table, X's indicate the colors which will be printed for each screen color. Use the arrow keys, or IJKM, to move the cursor. Place an X in each cell where you want printing, and use the space bar to remove X's. When you have completed the color definition, input (RETURN) to accept the color table. Pressing (ESC) will exit the color table without saving your changes.

Use overstriking to create secondary colors. For example, to create green, set color 2 to print as both yellow and blue. Similarly, use overstriking to create different intensities of grey for greyscale printing, as explained above.

When printing on a color printer, the following color table will print screen color 0 as black, screen color 1 as blue, screen color 2 as violet, screen color 3 as white space, etc. When printing on a B&W printer, screen colors 0 and 1 will print as a light grey, color 2 will print as a medium grey, screen color 3 as white space, screen color 4 as a darker grey, screen color 5 as the darkest grey, etc.

SCRN CLR	PRINTOUT YELLOW PIXELS	PRINTOUT RED PIXELS	PRINTOUT BLUE PIXELS	PRINTOUT BLACK PIXELS
0	( )	( )	( )	(X)
1	( )	( )	(X)	( )
2	( )	(X)	(X)	( )
3	( )	( )	( )	( )
4	(X)	( )	(X)	(X)
5	(X)	(X)	(X)	(X)
6	(X)	(X)	( )	( )
7	( )	( )	( )	( )

NOTE: When using inkjet printers, striking a pixel more than twice may result in wet and sloppy print-out, and is not recommended.

THE OPTIONS

⟨P⟩ PRINT *A* GRAFFILE

Function:

Option ⟨P⟩ is used to dump extended screen graphics, GRAFFILES, to your printer.

Form:

You'll first be asked to input the parameters (slot, drive, and volume) of the disk that contains your GRAFFILE. Next, enter the GRAFFILE's name. You may use the wildcard characters to enter it (see Chapter 5).

FONTRIX will search for the GRAFFILE on the specified disk, and finding it, ask "THIS ONE?". Answer ⟨Y⟩, for yes, if it is. The DUMP PARAMETER screen will be displayed, with the GRAFFILE name and dimensions shown at the top. If you'd like, change any or all of them as described at the beginning of this chapter. When they are set as you like, press ⟨RETURN⟩ alone to accept them.

You'll see a prompt asking you to turn your printer on-line. When this is done, press any key to continue, and witness larger-than-screen graphics printed right before your eyes.

⟨L⟩ LOAD A GRAPHIC SCREEN

Function:

Option ⟨L⟩ is used to load a single screen graphic from disk for printing. If you just worked on that screen in the GRAPHIC WRITER region, it is still present in memory, and doesn't need to be loaded. You can verify if your graphic is there or not by using the VIEW THE GRAPHIC SCREEN option described later in this chapter. If it's there, you may proceed directly to the SCREEN DUMP.

Form:

This option is identical to the LOAD GRAPHIC option that exists in the GRAPHIC WRITER. It begins by asking for the disk parameters. Accept the defaults or input new values. Next, you'll be asked for the filename of your graphic. You may use the wildcards to enter it (see Chapter 5 if you're unfamiliar with using the wildcard characters).

FONTRIX will search the disk specified for the file. Finding a match, it will ask you "THIS ONE?". Answer ⟨Y⟩, if it is, and you'll see the graphic loaded onto the screen. When it's finished, the GRAPHICS DUMP menu will return.

⟨V⟩ VIEW THE GRAPHIC SCREEN

Function:

Option ⟨V⟩ lets you take a look at the contents of the screen before you dump them.

Form:

Press ⟨V⟩ from the GRAPHICS DUMP menu. You'll see a message telling you to press any key. When you do,

⟨S⟩ PRINT THE GRAPHIC SCREEN

Function:

Option ⟨S⟩ is used to dump single screen graphics to your printer.

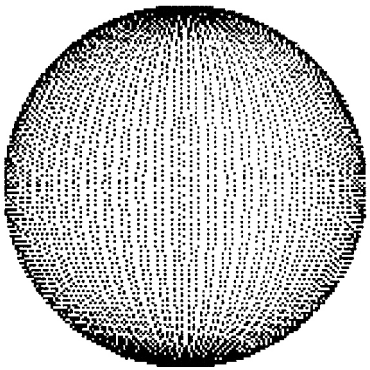
Form:

The PRINT THE GRAPHIC SCREEN option begins by presenting you with the DUMP PARAMETERS. You can change any or all of them in the manner described at the beginning of this chapter. When they are all the way you want, enter them by pressing ⟨RETURN⟩ alone.

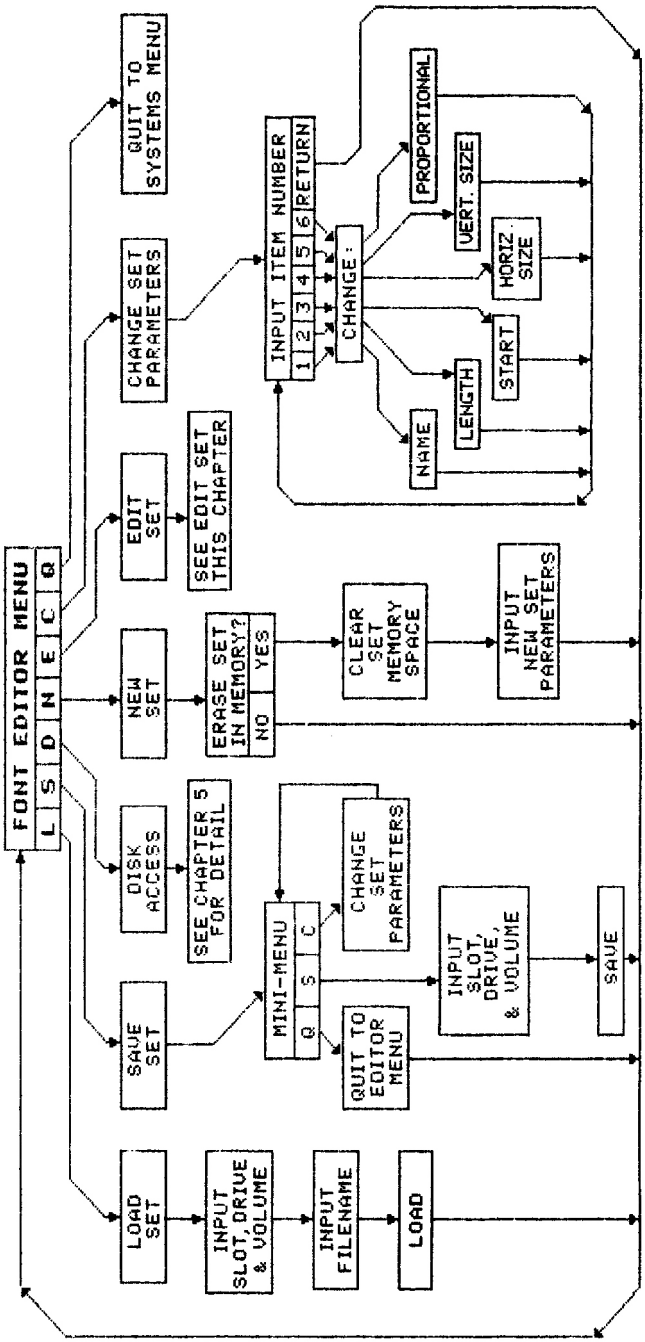
You'll then see a prompt asking you to turn your printer on-line. When this is done, press any key to continue, and listen to the sweet sound of the satisfied buzz of graphics.

⟨D⟩ DISK ACCESS

You can read about the DISK ACCESS tool kit in chapter 5.



CHAPTER 4
THE FONT EDITOR


FONT EDITOR MENU
L S D N E C Q
LOAD SET
INPUT SLOT, DRIVE & VOLUME
INPUT FILENAME
LOAD
SAVE SET
MINI-MENU
Q S C
QUIT TO EDITOR MENU
CHANGE SET PARAMETERS
INPUT SLOT, DRIVE, & VOLUME
SAVE
DISK ACCESS
SEE CHAPTER 5 FOR DETAIL
NEW SET
ERASE SET IN MEMORY?
NO YES
CLEAR SET MEMORY SPACE
INPUT NEW SET PARAMETERS
EDIT SET
SEE EDIT SET THIS CHAPTER
CHANGE SET PARAMETERS
INPUT ITEM NUMBER
1 2 3 4 5 6 RETURN
CHANGE:
NAME
LENGTH
START
HORIZ. SIZE
VERT. SIZE
PROPORTIONAL
QUIT TO SYSTEMS MENU

- CHAPTER 4 -

THE FONT EDITOR

IN THIS SECTION...

You'll find the directions for creating a new character set of your own, and instructions for saving and editing sets.

You may find it helpful in winding your way through the sub-strata of this program to occasionally glance back at the facing flow-chart as you read about its various sections.

Entering choice (F) from the FONTRIX SYSTEMS MENU has summoned up this screen:

```
 FONT EDITOR

CURRENT FONT IN MEMORY: ASCII

MENU

L)  LOAD SET
S)  SAVE SET
D)  DISK ACCESS
N)  NEW SET
E)  EDIT SET
C)  CHANGE SET PARAMETERS
Q)  QUIT TO SYSTEMS MENU

ENTER CHOICE: ■
```

At the top of the screen is displayed the name of the current set in memory. The set in the illustration is ASCII. It will be loaded into memory automatically every time you enter the FONT EDITOR.

Below the current set message is the FONT EDITOR menu. You'll probably recognize Disk Access as an old friend; if not, you can get aquainted in Chapter 5. The rest of the options will be discussed after a brief...

EXPLORATORY TRIP

If you'd like to familiarize yourself with the FONT EDITOR region by taking a guided tour, then boot your FONTRIX disk and choose menu option (F). If guided tours aren't your idea of adventure, then skip this section and proceed to THE OPTIONS.

Choosing (F) from the SYSTEMS MENU will produce the screen represented at the top of this page. This is the FONT EDITOR MENU. The main sub-set of the EDITOR is EDIT SET; the rest of the options are satellites of it. So let's go right to the heartland - enter (E) (RETURN).

The FONT EDITOR menu will vanish and the screen will be filled with columns of characters - these are the INDEX KEYS, used to reference the font's characters one at a time. They'll be used from the keyboard in the GRAPHIC WRITER region to display the font on screen. The "!" in the top left corner is flashing, indicating the position of your cursor.

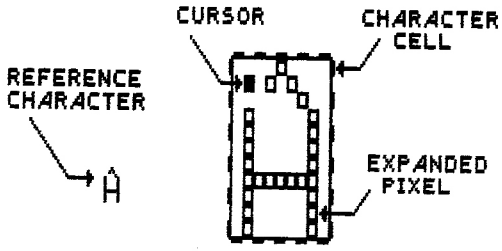
Above the INDEX KEYS is a block of information concerning the font in memory - its name (ASCII), first character (!), length (94), size (8 horizontal - 9 vertical), and whether it's proportional or not (yes). These will change to reflect whatever font you're working with.

To the right of the parameters is the EDIT SET menu. From now, until you exit EDIT SET with (Q), you won't have to press (RETURN) after an entry. As the menu indicates, (RETURN) functions as a select button in choosing a character from the set to edit.

Let's choose (V) first, and view the entire font - the INDEX KEYS vanish and are replaced by columns of the font's characters. After all the cast is present, a box appears around one of them. This is the font's flashing cursor counter-part. You can move it with (I), (J), (K), or (M) - try it.

Move the cursor over to the fifth column and place it around the "A". Now let's press (V) again, and viola!, the INDEX KEYS, with the flashing cursor over the "A". (I), (J), (K), and (M) still move the cursor, so move to a letter of your choice, and press (RETURN); we'll take a look at a single character.

Again the screen changes. A shape something like a postage stamp appears. This is the boundary of the character cell. Its size is determined by the horizontal and vertical size of the set in memory. The cell is now being filled with an array of small squares. This is an expanded representation of the character you see to the left of the cell. As soon as the array is complete, a flashing cursor appears in the top left cell corner.



You're already familiar with how to move the cursor around, so let's try it out. You'll find that if you pass through one of the cell walls, your cursor will jump to the opposite side.

To change the character, press the (SPACE BAR). The dot covered by the cursor will reverse its state - if on, it will go off, and vice-versa. This is the basis of how FONTRIX characters are built.

A quick look at the other options (and there's no need to memorize these, we'll cover them all in depth later) will reveal that...

(CTRL) (E) will erase the cell's contents.
(CTRL) (P) will remove the cursor and empower the (I), (J), (K), (M) keys to move the entire character around the cell - pressing any key other than the movement keys will send you back to normal edit mode.
(CTRL) (X) will return you to the INDEX KEYS without accepting any of the changes made to the character since you left. (handy if you've goofed)
(RETURN) will return you to the INDEX KEYS, changes intact.

...So let's press (CTRL) (X), preserving our set, and step back to the EDIT SET menu. We've seen how to move the cursor, view the font, and select a specific character. The two options remaining are involved with duplicating characters. These are (C), COPY, and (O), OVERLAY. They are operated in the same way, the difference being that COPY replaces one character with another, while OVERLAY merges two characters. Let's try them both - (C) first.

Press (C), and the EDIT SET menu is replaced by the COPY instructions, which ask you to move the cursor to the "origin", or character to copy FROM, and designate it by pressing (C)

again. Choose a character and press (C) again. Next, you're asked to place your cursor over the "target", or character to copy TO, and press (C) to enter it. Choose a target, and press (C) for the third time. The EDIT SET menu will reappear up too. With the cursor still over the target, press (V) and see if the copy worked.

OVERLAY operates the same way, except you'll be using the (O) key instead of the (C). Go ahead and follow the instructions as they appear and see what the OVERLAY function does.

(Q) will return you to the FONT EDITOR menu, and if you continue reading, you'll see how the rest of the options serve EDIT SET.

THE OPTIONS

(L) LOAD SET

FUNCTION:

This option brings a set in from disk for editing.

FORM:

First, you'll be asked to input the disk parameters. The default values shown on your monitor screen are derived from the slot, drive and volume most recently used. You may accept them by pressing the (RETURN) key alone; or input new values by entering the number and then (RETURN).

Next, you'll see the File Search screen appear. If you're not familiar with it yet, take the time to read the sections in Chapter 5 entitled: Using the Wildcards, and File Search.

Input the name of the set, and FONTRIX will turn on your drive and look for it. You'll then see a prompt asking you to confirm that the file found is the one you're looking for. This extra step allows you to use the wildcards as a shorthand method of typing in your filenames.

For example, if you want to load SET.OLD ENGLISH into memory, you could type O* when FONTRIX asks for the name of the set. A search will occur for any set starting with the letter O; then FONTRIX will print its find, in this case OLD ENGLISH, and ask if it's the one you were looking for.

Answer (Y) for yes if it is, and the set will be loaded into memory. Answer (N) for no if it isn't, and FONTRIX will look at the disk again, repeating the cycle. If no match is found, you'll see the File Not Found message. Then FONTRIX will display the FONT EDITOR menu and wait for further instructions.

(C) CHANGE SET PARAMETERS

FUNCTION:

This option allows you to redefine the six character set parameters:

* NAME OF THIS SET
* TOTAL CHARACTERS
* FIRST CHARACTER
* HORIZONTAL CELL SIZE
* VERTICAL CELL SIZE
* PROPORTIONAL

FORM:

WHAT ARE THE PARAMETERS REALLY?

(1) NAME OF THIS SET - is the filename with which you'll save and load your character set. The name may contain up to 15 alphanumeric characters. FONTRIX will truncate longer names after the 15th character. Only letters, numerals and periods (.) may be used. FONTRIX sets are automatically prefixed by "SET.". When entering the set name as a filename, you won't have to type the prefix except when operating on a set file from Disk Access.

(2) TOTAL CHARACTERS - refers to the length of your set - how many characters it contains. The maximum number of characters any one set may have is 94.

(3) FIRST CHARACTER - chosen from the 94 possible characters, is the character that your set begins with. Each of the 94 character spaces is addressed by a key from the Apple keyboard. The first character in a set is chosen by entering one of those Index keys. See Appendix F for a sequential chart of the Index keys.

(4) HORIZONTAL CELL SIZE - refers to the width of the individual characters you will create. The maximum width is 32.

(5) VERTICAL CELL SIZE - refers to the height of the individual characters. The maximum height is 32.

(6) PROPORTIONAL? - When a set is proportional, its characters, when printed, take up only as much horizontal space on the page (or screen) as they each individually occupy.

In a non-proportional set, horizontal space is determined by the set's horizontal cell size, and remains fixed regardless of how much space within the cell each character actually occupies.

For example: a set with a horizontal cell size of 20, where the capital W is 20 pixels wide, and the capital I is only 3 pixels wide, if proportional, will print the I and W next to each other without the interviening 17 pixels which were left over from the creation of the I.

A non-proportional set will print those extra spaces. Non-proportional sets are useful in situations where uniformity of print space is preferred.

When you enter the CHANGE SET PARAMETERS section of FONTRIX, you'll see the above six parameters together with their current values. A prompt will ask you to enter the item number of the parameter you want to change. The item numbers range from 1 to 6, and are located at the left of the screen.

At the bottom of the screen is a message that reads: <RETURN> ALONE EXITS. At any time before or after changing an item, you can return to the FONT EDITOR menu by pressing the <RETURN> key. (Pressing <RETURN> alone in the middle of changing a parameter will enter a default value, see chart below.)

To change an item, enter its corresponding number. The old value will then show on the screen in inverse, and you will be asked to input a new value. The following chart shows the maximum, minimum and default values for each parameter.

	PARAMETER	MIN	MAX	DEFAULT
1	NAME OF SET	1 LETTER	15 LETTER	UNKNOWN
2	TOTAL CHARACTERS	1	94	94
3	FIRST CHARACTER	!	~	!
4	HORIZONTAL SIZE	1	32	9
5	VERTICAL SIZE	1	32	12
6	PROPORTIONAL?	NO	YES	YES

Default values may be entered by pressing <RETURN> alone when the old value is displayed in inverse print.

There is a special case you may run across in items 2 and 3, TOTAL CHARACTERS and FIRST CHARACTER. There are only 94 possible characters in one set, so if you enter "A", for example, as the starting character, which is 62 spaces from the end of the set, and then try to enter a value greater than 62 for the total number of characters in the set, FONTRIX will correct the overflow by readjusting your starting character.

Similarly, if you try to enter a starting character that leaves fewer spaces than characters, the total number of characters will be adjusted down to fit.

If this sounds too confusing, try an experiment - go to the CHANGE SET PARAMETERS section of the FONT EDITOR. Enter a value between 63 and 94 into item 2.then enter a letter between "A" and "Z" into item 3. Watch and listen...

<S> SAVE SET

FUNCTION:

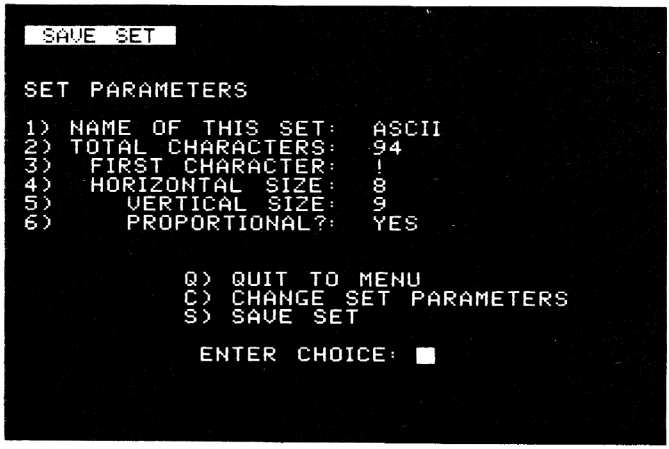
This option transfers a set and its parameters to disk.

NOTE: Character sets occupy as much as 37 sectors on disk, depending on the length of the set and the size of the

individual characters. A separate character set library disk must be set up. The FONTRIX Systems Disk is full and will not accept any files.

FORM:

On choosing option (S) from the FONT EDITOR menu, you'll see this on your monitor:



The set parameters are displayed in the center of the screen. Below them is the SAVE SET mini-menu with its three options:

(C) CHANGE SET PARAMETERS - If you have any last minute changes to make before saving the set to disk, option (C) lets you make them. Pressing (C) from the SAVE SET mini-menu brings you to the CHANGE SET PARAMETERS function. You can read about the parameters and how to work with them in the previous section. Once you've made the changes you wanted, pressing the (RETURN) key alone will bring you back to the SAVE SET mini-menu.

(S) SAVE THIS SET - Choose option (S) when you're ready to save a set to disk. You'll be asked for the

slot, drive and volume of the disk you want to save to. Input these and the SAVE function will execute. You'll then return to the FONT EDITOR menu.

If the disk specified doesn't have enough free space to receive your set, you'll see a Disk Full message. When this happens, you can either insert another disk, or go to Disk Access and delete any files you don't need from the disk on hand; then return to SAVE SET and choose (S) once more.

(Q) QUIT - Returns you to the FONT EDITOR menu.

(N) NEW SET

FUNCTION:

This option clears the character set memory space for the creation of a new set, and asks you to define the parameters for the set.

NOTE: Clearing memory for a new set will obliterate any set then in residence. Be sure you have a record of the set on disk if you want to keep it.

FORM:

When you enter NEW SET, FONTRIX will ask if you really want to erase the current set in memory. This is to insure against loosing accidentally in two shakes of the 6502 the time you put into your font. Answer (N) for no if you may have forgotten to save the latest version to disk, and you'll be brought back to the FONT EDITOR menu, where you can save that precious pattern of electrons.

Answer (Y) for yes if the old set is safely on disk, and FONTRIX will clear its set memory space. You'll then see the new set's parameters displayed on your monitor. Notice that FONTRIX has issued the default value, UNKNOWN, as the name of the new set. The rest of the parameters remain the same as those of the last set in memory. You can change any or all of these in the manner described in CHANGE SET PARAMETERS, earlier in this chapter.

It is recommended that you name your set right away, because sets named UNKNOWN, like other files that share the same name, pile on top of each other when saved to disk, replacing their predecessors.

Once you are happy with the new set's parameters, press ⟨RETURN⟩ alone to exit, which brings you to the FONT EDITOR menu again. You're now ready to choose option ⟨E⟩, and start work on a new font.

⟨E⟩ EDIT SET

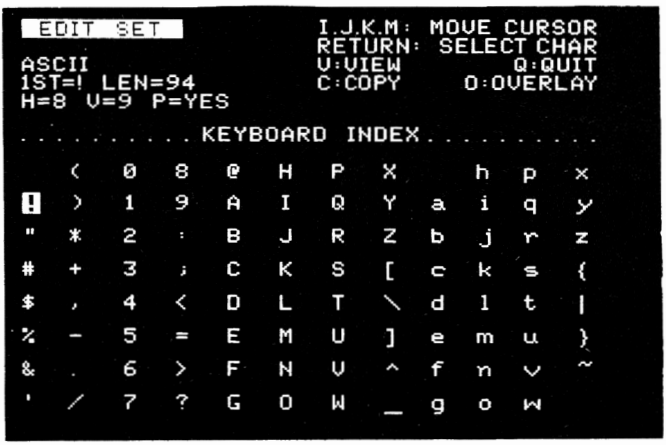
FUNCTION:

This option is the master control for creating new character sets and editing old ones. Once you're inside option ⟨E⟩, you should already have defined your set's parameters. The parameters are defined from either NEW SET, or CHANGE SET PARAMETERS.

NOTE: INSIDE EDIT SET, THE KEYBOARD IS PROGRAMMED FOR IMMEDIATE RESPONSE TO INPUT. YOU DO NOT HAVE TO PRESS ⟨RETURN⟩ AFTER AN ENTRY.

FORM:

Choosing option ⟨E⟩, you will see the following screen on your monitor:



If you are working with a set having a vertical or horizontal cell size exceeding 22, the line midway across the screen that reads "KEYBOARD INDEX CHARACTERS" will read "⟨SCREEN 1⟩ ⟨SCREEN 2⟩ ⟨SCREEN 3⟩".

This three-screen format comes into effect when either of the two cell size dimensions becomes too large to display all possible 94 characters of the font on one screen. As you read about the EDIT SET COMMAND KEYS later in this section, look for this symbol: **000**, for additional information about the three-screen format.

In the upper left corner of the screen, the parameters of the set in memory are displayed. The set in the illustration is ASCII. Right below the name are listed the other parameters...

1ST indicates the first character
LEN tells you the total number of characters
H is the horizontal cell size
V is the vertical size
P lets you know if the set is proportional or not

The main body of the screen is occupied by the Keyboard Index Characters. These are the letters, numerals, and symbols that are arranged in 12 columns across the screen. The left 4 columns contain punctuation and numerals. The middle 4 columns contain the capital letters, indicated by inverse characters. The right 4 columns contain lowercase letters, shown as normal capitals.

NOTE: If you have specified a lowercase adapter for your Apple II, or are using an Apple IIe, the capitals and lowercase Index characters will appear in their normal conditions.

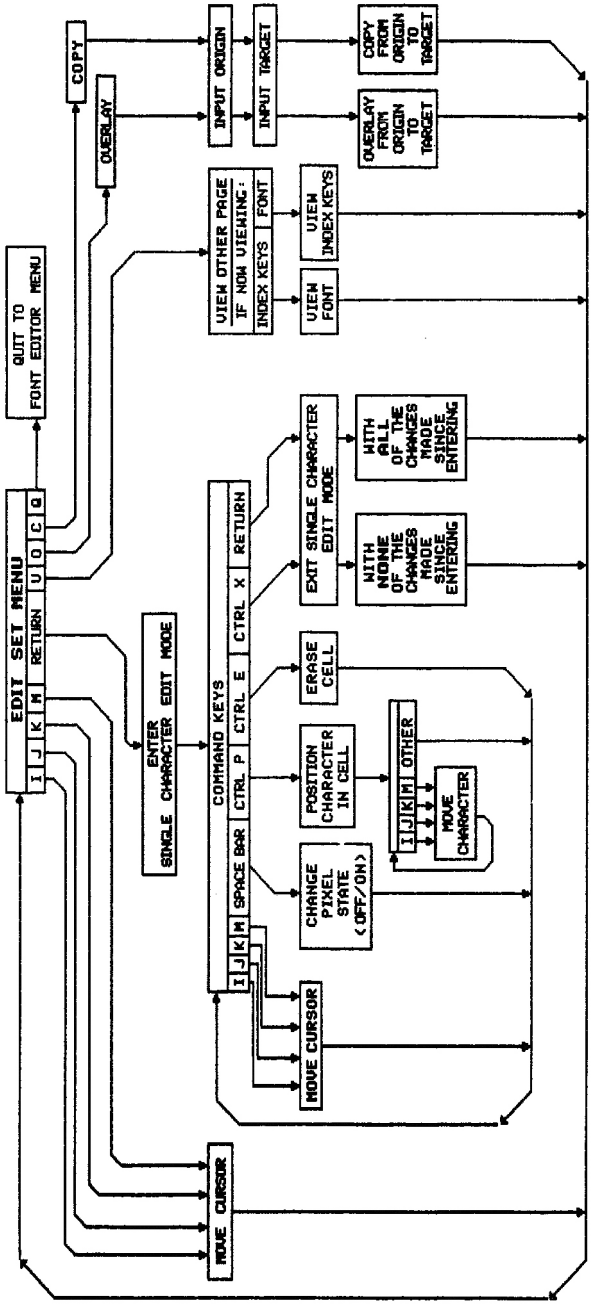
If you have this screen up on your monitor now, you'll see one of the Index characters flashing. This indicates the position of the cursor. FONTRIX will place the flashing cursor on the set's starting character when you enter the EDIT SET section.

The Command Keys of the EDIT SET mini-menu are displayed in the upper right corner. Let's look at these keys and their functions one at a time...

COMMAND KEYS

⟨I⟩,⟨J⟩,⟨K⟩,⟨M⟩ (ARROWS)

These four are cursor movement keys. They're used to position the cursor over a character you want to perform some


EDIT SET MENU
I J K M RETURN U O C Q
QUIT TO FONT EDITOR MENU
COPY
OVERLAY
INPUT ORIGIN
INPUT TARGET
COPY FROM ORIGIN TO TARGET
OVERLAY FROM ORIGIN TO TARGET
VIEW OTHER PAGE IF NOW VIEWING:
INDEX KEYS
FONT
VIEW INDEX KEYS
VIEW FONT
ENTER SINGLE CHARACTER EDIT MODE
COMMAND KEYS
I J K M SPACE BAR CTRL P CTRL E CTRL X RETURN
EXIT SINGLE CHARACTER EDIT MODE
WITH ALL OF THE CHANGES MADE SINCE ENTERING
WITH NONE OF THE CHANGES MADE SINCE ENTERING
ERASE CELL
POSITION CHARACTER IN CELL
CHANGE PIXEL STATE (OFF/ON)
I J K M OTHER
MOVE CHARACTER
MOVE CURSOR
I J K M
MOVE CURSOR

operation on. ⟨I⟩ moves the cursor up one character, ⟨J⟩ moves left, ⟨K⟩ moves right, and ⟨M⟩ moves down.

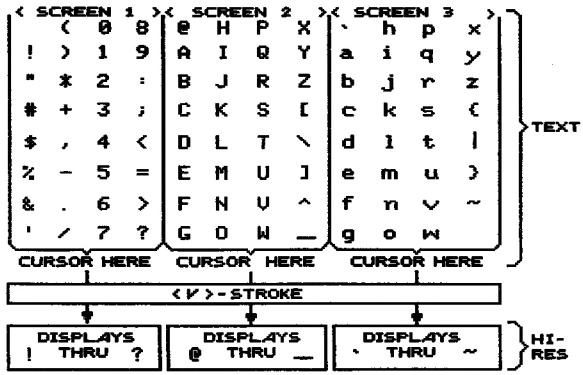
The EDIT SET cursor "wraps" top and bottom. This means that from the bottom row, an ⟨M⟩ will move the cursor to the top of the next column, and an ⟨I⟩ will move from the top row to the bottom of the preceeding column. An ⟨I⟩ at the first character of the set will move to the last character, and an ⟨M⟩ at the end moves to the beginning. If all this sounds like directions for the old shell game, don't worry, just try it out.

⟨V⟩

The ⟨V⟩ keystroke shuttles you from the Apple text screen, where the Keyboard Index characters are displayed, to the Apple Hi-res screen, where the actual font is shown. A second ⟨V⟩-stroke will bring you back to the text screen.

While the Hi-res screen is in place, you have access to all the Command Keys in just the same way as from the text screen. The Hi-res cursor forms a frame around the current character instead of flashing. You can move it with the ⟨I⟩, ⟨J⟩, ⟨K⟩ & ⟨M⟩ keys exactly like the text cursor.

000 If either the horizontal or vertical cell sizes are greater than 22, a ⟨V⟩ from the text screen will display one third of the possible 94 characters on the Hi-res screen. When the text cursor is in the region marked ⟨ SCREEN 1 ⟩, the first third is displayed; when the text cursor is under ⟨ SCREEN 2 ⟩, you'll see the second third; and ⟨ SCREEN 3 ⟩ will display the last third. The following illustration depicts the concept graphically...



000 Columns and rows are reversed when FONTRIX enters the Hi-res three-screen format, so that characters that are displayed in vertical columns on the text screen are displayed horizontally, in rows, on the Hi-res screen.

000 If your set straddles either or both of the screen thirds boundaries, you may move from one third to another in Hi-res mode by moving your cursor past the bounds of the screen in the direction of the rest of the set.

For example: Set.HYPOTHETICAL is 32 pixels wide by 32 pixels high, placing it in the realm of three-screens. It has a total of 94 characters, starting at the "!". We load the set into memory and enter EDIT SET. FONTRIX dutifully flashes the "!", letting us know it is ready to be edited. We press ⟨V⟩ to view the font, and see the various punctuation and numerals that reside in the first third of the set. FONTRIX has placed a frame around the font's "!", showing that the cursor hasn't moved.

Those are nice, we say, but let's see the alphabet. So we press the ⟨M⟩ four times, moving from the "!" across the ")", the "1" and the "9", and then the screen dissolves and the second third of our font appears. The cursor is now on the "A". Pressing ⟨V⟩ again confirms that we've crossed a screen boundary, for there's the "A" flashing at us from the text screen.

Four ⟨K⟩ presses, and the cursor is now on the lowercase "a" in the last third of the three screen format. Pressing ⟨V⟩ from here will display the Hi-res screen and the last third of the font.

⟨C⟩

Command ⟨C⟩, Copy Character, allows you to move the contents of one character cell to another. While creating the character sets included in the FONTRIX Library, we found this function to be indispensable. It enables you to distribute frequently occuring features, such as a vertical bar, throughout the set, without having to redraw for every character that incorporates them.

When you press ⟨C⟩, you'll enter Copy Mode. In the upper right corner of the text screen, where the Command Key menu is usually displayed, you'll see a message asking you to position the flashing cursor over the origin. Move the cursor in the standard way, using the ⟨I⟩, ⟨J⟩, ⟨K⟩, ⟨M⟩ keys, to the character space you want to copy from - that's the origin. Press ⟨C⟩ again to enter it. When you've done that, FONTRIX will ask you to enter the target character. Move the cursor to

the character space you want to copy to - that's the target. Press (C) once more, and the process is complete. You'll see the Command Key menu back at top, and if you view the Hi-res screen, you'll see that what was in the origin, is now in the target as well.

(O)

Command (O), Overlay Character, operates in the same way as (C) Copy. However, while Copy transfers the ENTIRE contents of a cell, including empty space, Overlay only transfers the pixels that are on. This means that Copy will erase anything in the target cell when it writes in the character from the origin. Overlay will place the character from the origin cell on top of whatever is occupying the target. With (O), you can then combine several character segments in one cell.

To use Command (O), follow the directions for Copy, substituting (O) for (C) when you input the origin and target.

NOTE: Both Copy and Overlay are addressable from the Hi-res screen. However, the prompting message will not appear in Hi-res mode, so we advise getting familiar with these functions in text mode before flying blind.

(RETURN)

The (RETURN) Command selects a character for editing. First, using the (I), (J), (K), (M), or arrow keys, position the text cursor over the character you want to edit, then press (RETURN). The monitor screen will clear, and you will enter:

SINGLE CHARACTER EDIT MODE

The first thing you'll see after pressing (RETURN) from the EDIT SET Command Keys is the character cell border; it looks something like the outline of a postage stamp. If there is a character already defined for this space, it will appear as it looks in print on the left side of the character cell. This reference character will be constantly updated as you make changes.

FONTRIX will then fill in the cell with an expanded form of the reference character, placing small squares wherever a

pixel is turned on. If the character space is empty, there will be a short wait while FONTRIX looks through the cell.

Next, the Editor cursor will appear in the upper left corner of the character cell. As soon as the cursor comes on, you're ready to begin editing. So, let's take a look at the keys you'll use, one at a time...

EDITOR KEYS

⟨I⟩,⟨J⟩,⟨K⟩,⟨M⟩ (ARROWS)

Yes, these keys are still used to move the cursor. Movement is now constrained to the cell boundary, and the Editor cursor will wrap four ways - moving past any of the four boundary walls will place the cursor on the opposite side of the cell; I.E., an ⟨I⟩ from the top moves you to the bottom, a ⟨J⟩ from the left moves you to the right...etc.

⟨SPACE BAR⟩

The space bar is used to change the state of the pixel that the cursor currently occupies. If the cursor is solid, indicating a blank pixel, pressing the ⟨SPACE BAR⟩ will turn it on. If the cursor is an open square, indicating a pixel that is already on, the ⟨SPACE BAR⟩ will turn it off.

⟨CTRL⟩ ⟨E⟩

⟨CTRL⟩ ⟨E⟩, ERASE, will clear the entire character cell. Don't press ⟨CTRL⟩ ⟨E⟩ if you're planning on keeping the character. If you do hit it accidentally, you may exit SINGLE

CHARACTER EDIT MODE with ⟨CTRL⟩ ⟨X⟩, and still keep whatever you had when you entered.

⟨CTRL⟩ ⟨P⟩

⟨CTRL⟩ ⟨P⟩, POSITION, allows you to reposition the character within the cell. Pressing ⟨CTRL⟩ ⟨P⟩ places you in position mode. You'll know you're there when the Editor cursor disappears, and a rectangular border appears around the reference character. You can then use the ⟨I⟩ ⟨J⟩ ⟨K⟩ ⟨M⟩ keys to move the character. Each of these keys moves the whole character one pixel space in its usual direction. You'll see the reference character move with every press of the ⟨I⟩, ⟨J⟩, ⟨K⟩, ⟨M⟩ keys.

CAUTION: WATCH THE REFERENCE CHARACTER AS YOU MOVE - MOVING PAST THE BORDER MAY CUT OFF PART OF THE CHARACTER.

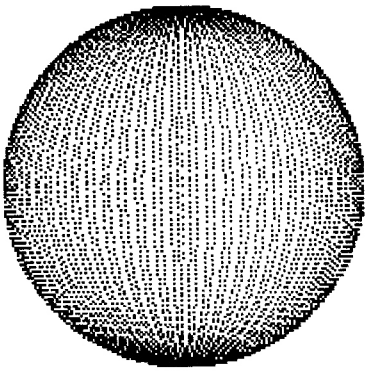
To exit position mode, press any key other than the cursor movement keys. The character cell will clear momentarily, and FONTRIX will refill it with the repositioned character. The Editor cursor will reappear in the upper left.

⟨CTRL⟩ ⟨X⟩

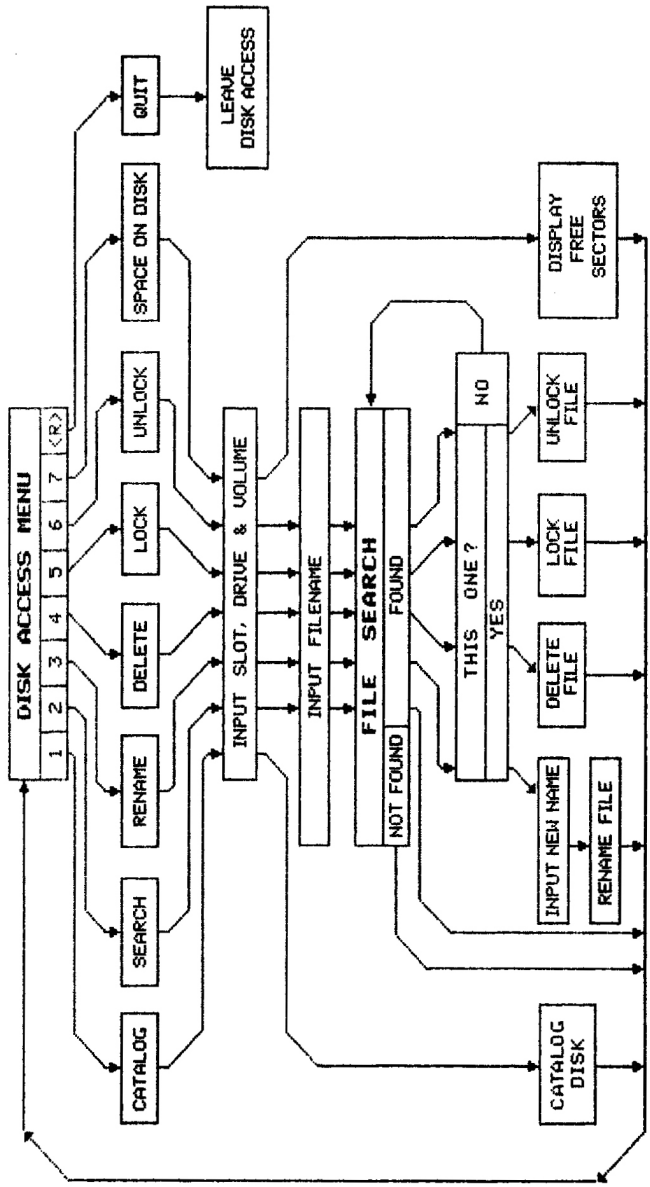
⟨CTRL⟩ ⟨X⟩ allows you to leave SINGLE CHARACTER EDIT MODE with exactly the same character you had when you entered. If you're unhappy with the last set of changes, or had mistakenly erased your character, you can press ⟨CTRL⟩ ⟨X⟩, and reject all changes made to the character since you entered SINGLE CHARACTER EDIT MODE.

⟨RETURN⟩

From SINGLE CHARACTER EDIT MODE, ⟨RETURN⟩ will accept your character as it looks on the left of the character cell, and return you to EDIT SET.



CHAPTER 5
DISK ACCESS


DISK ACCESS MENU
1
2
3
4
5
6
7
<R>
CATALOG
SEARCH
RENAME
DELETE
LOCK
UNLOCK
SPACE ON DISK
QUIT
LEAVE DISK ACCESS
INPUT SLOT, DRIVE & VOLUME
INPUT FILENAME
FILE SEARCH
FOUND
NOT FOUND
THIS ONE ?
YES
NO
DISPLAY FREE SECTORS
UNLOCK FILE
LOCK FILE
DELETE FILE
INPUT NEW NAME
RENAME FILE
CATALOG DISK

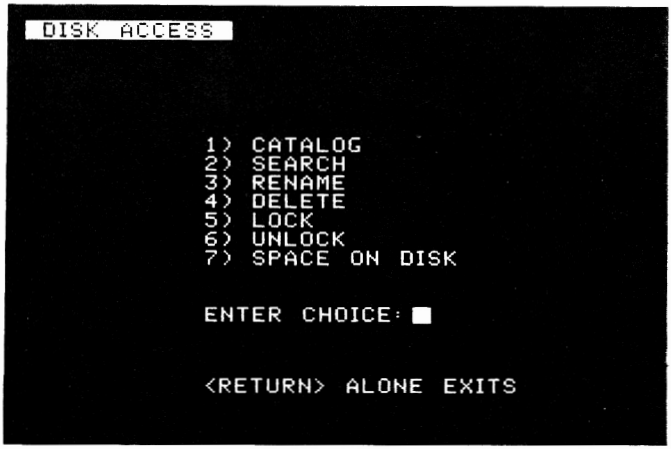
- CHAPTER 5 -

DISK ACCESS

IN THIS SECTION...

You'll find familiar DOS functions along with some new features that will be showing up in Data Transforms' software. Disk Access allows you to interact with your disk from within the FONTRIX program; it is addressable from almost all other sections of the FONTRIX System.

By entering menu choice (D), you have been presented with the following menu...



The Disk Access functions all share certain similarities. All seven begin by asking for the disk parameters (slot, drive and volume) of the disk you intend to interface. FONTRIX will provide default values, which are derived from the slot, drive and volume most recently used. You may accept the default values by pressing the (RETURN) key alone, or you may enter new values by pressing the desired number and then (RETURN).

The Disk Access functions all use Data Transforms' Disk Operating Kernal (DOK). DOK incorporates two wildcard characters which can be used as a convenient typing shorthand, or as generalized templates for isolating groups of similarly

named files. A discussion on using the wildcards follows, after which each Disk Access option will be described individually.

USING THE WILDCARDS

There are two wildcard characters that function as variable unknowns, allowing you to search for occurances of types of filenames automatically without having to look at an entire catalog:

```
* = any string of characters
? = any single character
```

These may be inserted anywhere in the sought-after filename.

```
A CLOSE ?ACE will match: A CLOSE RACE
                         A CLOSE FACE
                         A CLOSE MACE etc.
```

FONTRIX will match an "*" with any group of characters in a filename from the "*" to the end of the filename, or to the first ".", whichever comes first. EXAMPLES:

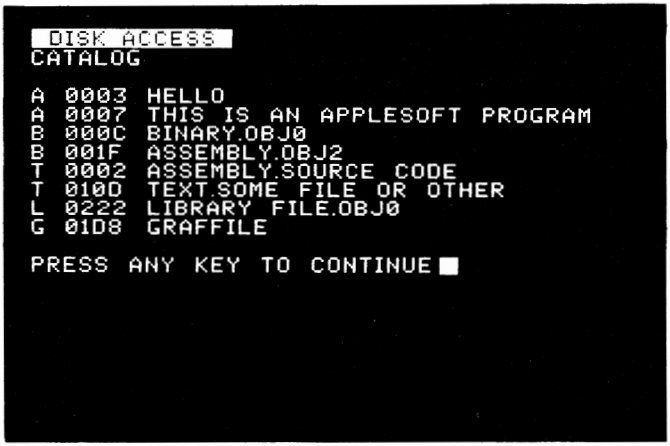
```
A CLOSE* will match: A CLOSE FACE
                     A CLOSET CASE
                     A CLOSER SHAVE etc.

SET.* will match: SET.TEST
                  SET.ROMAN BOLD
                  SET.UNKNOWN etc.

*.*.OBJ? will match: FONTRIX.EDIT.OBJ0
                     ULTRA RES1.0.OBJ1
                     DOK 1.1.OBJ0 etc.
```

As you can see by the last example, wildcards may be used in conjunction with each other as well as with ordinary characters.

THE OPTIONS

⟨1⟩ CATALOG DISK

Option 1, CATALOG DISK, will first ask for the parameters of the disk you want cataloged. Accept the displayed default values, or enter new ones. Your drive will fizz and whir a moment and you'll see the disk's catalog...like this one for example:



This reads a little differently from the usual catalog...not much, but enough to make you wonder if you weren't expecting it. The familiar asterisk (*) is present to indicate a locked file. The leftmost column of letters refer to the filetype:

A = Applesoft (basic programs)
B = binary (assembly program object codes, graphics)
T = text (assembly source codes, text files)
L = library file (DATA TRANSFORMS convention)
G = GRAFFILE (FONTRIX extended screen graphics)

Next is the file length (given in hexdecimal's base sixteen). Followed by the filename.

At the end of that disk's listing, the message: "Press Any Key To Continue" will appear. Press a key and you'll be taken

back to the Disk Access menu.

⟨2⟩ FILE SEARCH

Option 2, FILE SEARCH, is a handy addition from Data Transforms. It is used in most sections of FONTRIX that interact with the disk drives, so we suggest reading these next few paragraphs to familiarize yourself with its particulars.

On chosing option 2, you will be asked for disk parameter input, as in the other Disk Access functions. You will then see this on your monitor:

See the section, Using The Wildcards at the start of this chapter for an explanation of the ⟨*⟩ and ⟨?⟩.

Now that you're familiar with the wildcard functions, you may choose to use them or enter an ordinary DOS filename and begin the File Search. If you press ⟨RETURN⟩ alone, you'll be back at the Disk Access mini-menu. Once you've entered your filename, FONTRIX will display any filename(s) that match the target. You'll then be taken back to the Disk Access menu.

⟨3⟩ RENAME

First, input the disk parameters of the file you wish to rename, then, FONTRIX will ask for the filename. RENAME utilizes the wildcard characters, so you may use them in entering your filename.

Once FONTRIX has the filename, or partial name with wildcards, it will search the specified disk for a match. Finding one, it will ask for confirmation. Answer ⟨Y⟩ for yes, if that's your file, and you'll then be asked to input the new filename.

Remember that the filename must begin with a letter; it may contain only letters, numbers and periods (.); and it may be up to 30 characters long, including spaces.

Once you've entered the new filename, FONTRIX will rename the file on disk unless it: A) is issued an illegal filename, or B) finds that the file it's trying to rename is locked.

⟨4⟩ DELETE

Input the disk parameters, and you'll be asked for the filename you want deleted. You may use the wildcard characters to search for your file. When FONTRIX finds the file it will ask if that's the one you want to delete. Answer ⟨Y⟩ for yes if you're 100% happy never to see that file again, and the file will be deleted. Answer ⟨N⟩ if you have any qualms, and you'll be given the Disk Access menu back without having done anything at all.

If the file is locked, the DELETE function will not execute. Instead, you'll see a FILE LOCKED message, and return to the Disk Access menu. You may unlock the file from the menu if you wish, and then delete.

⟨5⟩ LOCK

If you have a file you want to protect, locking it will prevent it from being renamed, deleted or overwritten by saving the same filename. First, input the disk parameters. Then enter the filename you want to lock; you may use the wildcard characters to search for the file.

When FONTRIX returns with a filename, answer ⟨Y⟩ to lock it, or ⟨N⟩ to look for another.

⟨6⟩ UNLOCK

If you wish to access a locked file, use option 6 to unlock it. Input the disk parameters, and then the filename you want to unlock. You may use the wildcard characters to search for your file.

Answering ⟨Y⟩ to FONTRIX's query will unlock the file.

⟨7⟩ SPACE ON DISK

Option 5, SPACE ON DISK, will start like the other Disk Access options by asking for the disk parameters. It will then read the disk directory and return with the number of free sectors remaining on that disk.

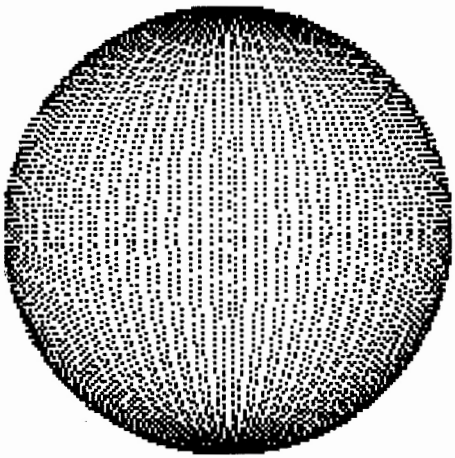
This section is particularly useful in determining whether you have room to save a character set or graphic. (Apple Hi-Resolution graphics require 34 sectors; FONTRIX GRAFFILES range between 30 and 480 sectors; and, FONTRIX character sets may need as many as 37 sectors.)

Once again, you will be asked to press any key, and be instantly transported to the Disk Access menu.

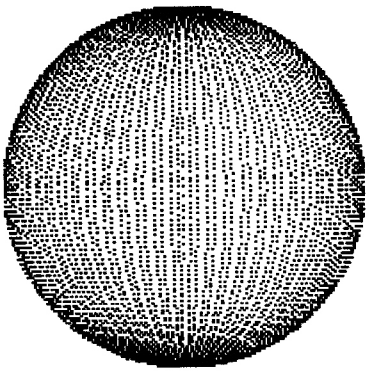
⟨RETURN⟩

Pressing ⟨RETURN⟩ alone will exit DISK ACCESS, and bring you back to the menu that called it.

FONTRIX



FLORA & FAUNA



CHAPTER 6
THE GRAFFILE

- CHAPTER 6 -

THE GRAFFILE

T'was scrolling, and the floppy disk
Did whirr and burble in the drive;
All sectored with the GRAFFILE'S list,
An extended screen to contrive.

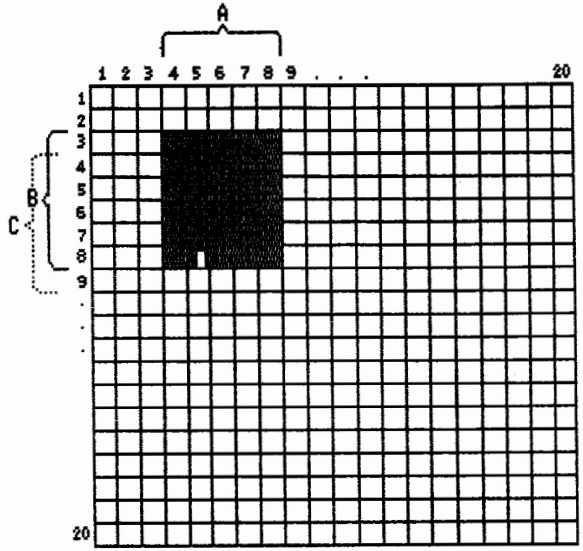
Come share the GRAFFILE'S bytes with me,
Its screens that scroll and buffers catch.
Compare the Hi-res page and see
A roominess hard to match.

A GRAFFILE is an extended graphic file, and what it does is give you LARGER THAN SCREEN GRAPHICS.

GRAFFILES are created in the GRAPHIC WRITER section of FONTRIX, and printed with FONTRIX'S PRINT GRAPHICS program.

A GRAFFILE MODEL

The following illustration depicts a GRAFFILE in relation to the hi-res screen...



400 sector GRAFFILE (20 x 20)

The GRAFFILE shown is 20 sectors wide by 20 sectors tall. Each sector is represented by one square. The hi-res screen is the shaded area. You can see that it occupies 30 sectors (5 x 6). The screen acts as a window to the larger GRAFFILE, moving across its surface like a glass bottomed boat to display 30 sectors at a time.

In the illustration, the screen window is shown changing position vertically from 'B' to 'C', while the horizontal position, 'A', remains unchanged. The agent of this change is the screen's cursor, shown as a small blank rectangle at the bottom edge of the screen. Whenever the cursor reaches one of the screens four edges, it pulls the entire screen window over one sector. This is how you get to the far reaches of a GRAFFILE.

OPENING A GRAFFILE

In order to be with a GRAFFILE, you have to open one...it's protocol. So, the first thing you'll need is an initialized disk other than the FONTRIX Systems Disk, which is

too crowded for a GRAFFILE (they're large). The opening is accomplished with the OPEN GRAFFILE option in the GRAPHIC WRITER region of FONTRIX. For a step by step procedure, see Chapter 2 in the FONTRIX Travel Guide.

Anytime you want to do anything with a GRAFFILE, its disk must be in the drive, for it exists jointly in memory and on disk, which functions as extra memory space during operating time. When a GRAFFILE is opened, the GRAPHIC WRITER secures "reserved seats" on the disk for it, and keeps other programs from sitting there. It is vital that you NOT switch disks once you've entered WRITE ON A GRAPHIC, because the GRAPHIC WRITER will create quite a stink over what it views as its section of the balcony. It can write into even locked files when provoked with a strange disk.

GRAFFILE NAMES

The first event in opening a GRAFFILE is nameing it. With the GRAFFILE disk in your drive, enter the name. If you're opening a GRAFFILE that you've already worked on, you can use the wildcard characters (see Chapter 5) to search for the name. If you use the wildcards, or any character other than straight alphanumerics or periods, when entering a brand new GRAFFILE name, you'll get an ILLEGAL FILENAME message.

FONTRIX knows whether you've entered a new name or the name of a existent GRAFFILE by searching the disk's directory. If the name is found there, i.e. if the GRAFFILE exists, FONTRIX opens it. If the name is not found, FONTRIX will use the name you entered to open a new file.

Should you not wish to open a new GRAFFILE at this point, simply press (RETURN) to back out.

GRAFFILE SIZE

When a GRAFFILE is opened for the first time, you'll also need to input its size, which is defined in sectors, horizontal times vertical, the product of which cannot exceed 480. A normal Apple Hi-res graphic screen occupies 30 sectors...5 horizontal by 6 vertical...plus 2 sectors of catalog and directory information and 2 sectors of wasted space, totalling 34 sectors on disk. The smallest GRAFFILE, single screen sized, is 5 x 6 sectors, totaling 30.

Using a horizontal base of 5, and a vertical base of 6, you can design a GRAFFILE'S size and dimensions to suit your

needs. For example, if you wanted to produce a graphic image five screens wide and one and a half screens tall, the GRAFFILE dimensions you'd enter would be 25 horizontal sectors, and 9 vertical sectors. The total size of that GRAFFILE on disk would be 25 x 9, or 225 sectors.

Possible Problems...

FONTRIX refuses a horizontal or vertical input: The input is probably either too large or too small. Horizontal sectors may range between 5 and 80; vertical, between 6 and 96.

FONTRIX accepted the horizontal size, but changed its mind: While the horizontal input was within the correct range, the vertical input caused the total sectors to exceed the size ceiling (480).

DISK FULL message: The disk you are opening your GRAFFILE on doesn't have enough free sectors to accomodate it.

FILETYPE MISMATCH message: A non-GRAFFILE file of the same name as your entry already exists on disk.

WORKING WITH A GRAFFILE

FINDING YOUR WAY AROUND

Since you can see only one screen's worth at a time of a larger than screen graphic, when a new GRAFFILE is opened, it's good procedure to choose the WRITE ON A GRAPHIC option. Spend a little time wandering through the graphic space, getting familiar with where the boundaries are, and doing reconnaissance with the placement of your graphic in mind. You may find it helpful to leave small marks (that can later be erased) as signposts for placing your graphic...it's the old breadcrumb technique. Likely spots for markers are the GRAFFILE'S four outer boundaries, and the horizontal and vertical centers.

Each time the cursor passes the edge of the screen, your disk drive will come alive, one sector will be read into memory and the image on screen will scroll one sector (1/5 screen horizontally - 1/6 screen vertically) in the direction of

travel. The sector that falls off the other side is saved to disk. Counting the number of scrolls will help determine where the center marks should go.

GRAFFILES AND THE FONTRIX SYSTEM

Anytime while working on the graphic screen you can quit from WRITE ON A GRAPHIC and change fonts, or access any other part of the GRAPHIC WRITER program and re-join your GRAFFILE. It will be waiting for you intact.

CHOOSING AND USING FONTS

The versatility of GRAFFILES is complimented by the wide range of design and purpose of the FONTRIX Character Sets...load an algebraic set, and the GRAFFILE is transformed into a blackboard for multiple equations...load a set of brushstrokes, chose your palette from the color options, and the GRAFFILE is a canvas...load a calligraphic set, and the GRAFFILE metamorphoses to papyrus...

The CHOOSE FONT option is used to load Character Sets. You can read about its workings in Chapter 2.

INSERTING AND LIFTING SCREENS

Any Apple Hi-resolution graphic that has been created by any means and saved on disk may be inserted into a GRAFFILE. To accomplish this, open the GRAFFILE and enter the WRITE ON A GRAPHIC section of FONTRIX'S GRAPHIC WRITER. By moving your cursor, scroll the screen window to the spot that you want to insert a graphic. Quit, (CTRL) (Q), from WRITE ON A GRAPHIC, then choose option (L), LOAD GRAPHIC. FONTRIX will ask for the name of the graphic and what drive the disk it occupies is in. Input these and you'll see the graphic loaded into your chosen spot.

You can now return to WRITE ON A GRAPHIC and continue with your GRAFFILE; or choose option (C), CLOSE GRAFFILE...and the inserted graphic will be saved along with the rest of the GRAFFILE.

By a similar process, a single Hi-res screen may be cloned

from a GRAFFILE and saved on disk as a separate image, a separate file.

Once again, open the GRAFFILE and enter WRITE ON A GRAPHIC. Scroll the screen window until it frames the image you want to lift. Quit, (CTRL) (Q), to the GRAPHIC WRITER menu and select option (S), SAVE GRAPHIC. FONTRIX will ask for the location of the disk you'll save to (slot,drive and volume), and for a filename. Input these and the image will be saved. Remember to close the GRAFFILE if you're finished with it.

This process does not change the GRAFFILE in any way...it simply duplicates a screen-sized section, and saves it as an ordinary Apple Hi-res graphic.

SOME EDITING FEATURES

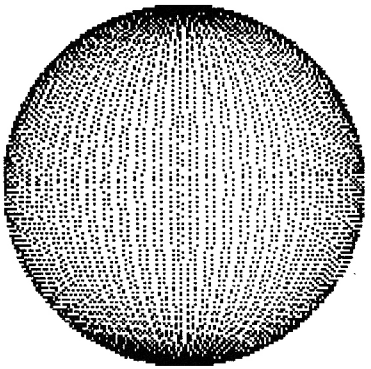
When you take your GRAFFILE into the WRITE ON A GRAPHIC option, it begins to behave like a Swiss Army knife...there are lots of functions. For a descriptive inventory of gadgetry, whatsits, and thingamabobs, see Chapter 2, the section titled COMMAND KEYS, in the FONTRIX Travel Guide.

CLOSING A GRAFFILE

Closing a GRAFFILE is accomplished from option (C), CLOSE GRAFFILE, of the GRAPHIC WRITER menu. For a step by step proceedure see Chapter 2, in the FONTRIX Travel Guide.

To keep a record of a GRAFFILE on disk, it must be closed. FONTRIX will not let you quit from the GRAPHIC WRITER section or open another GRAFFILE if one is left open.

At the time of closing, as at all other times when the GRAFFILE is operated on, its disk must be in the proper drive. FONTRIX will ask you to do so, after which the GRAFFILE may be closed, where it remains dormant until next summoned by you.



CHAPTER 7
THE GRIN HARDWARE

- CHAPTER 7 -

THE GRIN HARDWARE

GRIN HARDWARE?

What is GRIN hardware?

Well, we're not talking about teeth. GRIN stands for GRaphic INput. However, as in all good dental surveys, we'll divide them into three groups, all active in the GRAPHIC WRITER region of FONTRIX.

Group 0 is the keyboard, the GRIN source your Apple came with. Your keyboard is often the primary means of graphic input, and always figures into the process somehow. Groups 1 and 2 are auxiliary. These are the paddles, trackballs, mice, joysticks and tablets. They couple with the keyboard to provide alternative cursor movement capacities. Their major value is in placing a font character or dot quickly and easily at a precise location on screen.

All GRINs are plugged into the game I/O on the Apple mother board, except for the tablets, which plug into one of the slots via an interface card. They are all activated from the GRAPHIC WRITER by pressing (CTRL) (G).

When a GRIN source is active, the cursor takes on the shape of the current font character, which is chosen by pressing its associated index key from the keyboard. The character may now be moved across the screen by manipulating the GRIN controls, and placed in a precise location with the press of a button.

Let's take a look at the GRINs individually...

GROUP 1

PADDLES, TRACKBALLS, AND MICE

Each of these GRINs have 2 active buttons, an accelerator for increasing the speed of cursor movement, and a drawing button for placing a character, dot or line on the screen. Let's look at the specifics of each.

The PADDLES
are numbered 0 and 1. Paddle 0 controls horizontal movement; its button is used for drawing. Paddle 1 controls vertical movement; its button is the accelerator.

The TRACKBALL
moves the cursor through the full 360 degrees by means of its rolling ball. The lower button draws on screen, and the upper button is the accelerator.

The MOUSE
is sort of like a trackball turned upside down. It moves the cursor by rolling along a desk top. The Product Associates mouse has three buttons. FONTRIX uses only the right and middle ones. The right button is the accelerator, and the middle is used to draw with.

The GRINs of Group 1 share the same "transportable domain" cursor movement format. When activated, they will manipulate the cursor inside of a domain roughly 3 to 4 inches square. The domain may be moved to a different part of the screen, or GRAFFILE, by pressing the accelerator button while moving the cursor. The domain may also be moved by using the (I) (J) (K) (M) or arrow keys.

GROUP 2

JOYSTICKS AND TABLETS

The GRINs of Group 2 are more versatile and user friendly than those of Group 1 because their domain is full screen, and not limited to a small area.

The JOYSTICKS
give 360 degree movement from a single swiveling stick control. Used in POINT MODE (CTRL P), they are quite handy for drawing straight lines. The lower button is used to draw on the screen, and the upper one is an accelerator to speed cursor movement.

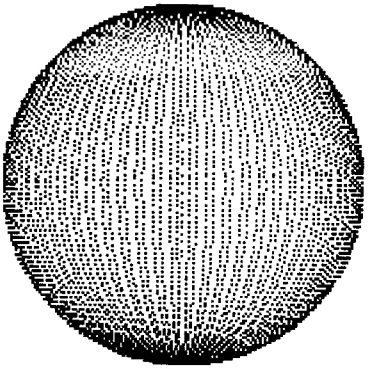
Each time the joystick is activated, you'll notice a tendency of the cursor to drift across the screen. This is easily corrected. First, move the cursor towards the center of the screen (if it is in its "home" position at the top left, the drift will not show). Then, adjust the slide controls,

located to the left and below the stick, until the drift stops. Finally, to stablize the cursor at high speeds, depress the accelerator button, and if an opposite drift manifests, back off on your previous adjustment while holding the accelerator down until the cursor remains stationary.

The TABLETS

are best suited for free drawing techniques. The electromagnetic pen is used to move the cursor across the screen. When the pen is in its down position, it will draw on the screen.

When working with a tablet on a GRAFFILE be cautious with the pen around the perimeter of the tablet. You may cause unexpected scrolling of the extended screen by suddenly placing the pen down at a spot that FONTRIX reads as being outside of the current screen boundaries. This will not damage your GRAFFILE in any way, but is somewhat disconcerting if you're the type of person that likes to know where you are in space and time. If this does happen, don't worry, you can always find your way back to where you were. GRAFFILES may be large, but they're finite.



CHAPTER 8
THE FONT

- CHAPTER 8 -

THE FONT

WHAT IS A FONT?

Webster's New Collegiate Dictionary defines FONT as, "an assortment of type all of one size and style". FONTRIX fonts need not be so ridgid. The characters comprising a font may be as varied as need dictates, or whim fancies. The constants that hold a group of characters together in a FONTRIX font are the SET PARAMETERS: name, length, beginning, horizontal and vertical cell sizes, and proportionality. You can read more about the SET PARAMETERS in chapter 4.

What's more, the font doesn't have to consist of letters at all. Some alternative fonts could include: special applications symbols - electronics, interior decorating, meteorological, etc.; border designs; brush strokes; calligraphic nibs; elven runes; the possibilities are endless. What do you need your computer to print?

FONTRIX fonts are created from the FONT EDITOR region (described in chapter 4), and may be used to write or draw on the high resolution screen in the GRAPHIC WRITER region (chapter 2).

CREATING NEW FONTS

SETTING UP THE PARAMETERS

To begin work on a new font, choose option (N) from the FONT EDITOR menu. You'll be asked if you want to erase the set in memory. (FONTRIX will hold only one set at a time. Loading a set from disk, or initiating a new set will erase the old set in memory.) Answer (Y), but be sure you've saved that last set if it doesn't already exist on disk.

You'll then see a display of the new font's SET PARAMETERS. The new name is unknown, so press (1) (RETURN) to name your font. Enter a name containing 15 characters or less. FONTRIX will truncate longer names. Legal characters include

numerals, letters and periods. All others are illegal; FONTRIX will refuse them. Press (RETURN) to enter the name when you're done.

The rest of the parameters will remain the same as those of the last set in memory. They may be changed one at a time by pressing the item number (located to the left of the parameter). The current value will appear in inverse on your screen, and you'll be asked to input a new value. Once again, (RETURN) will enter the value.

WHAT PARAMETERS ARE BEST?

This really depends on the set you have in mind.

The NAME is just a matter of style. It merely serves as a filename for storing and recalling your font. Choose one you like. Set names are automatically prefixed with "SET." when saved. You'll see the prefix in a catalog listing. When saving or loading your font, however, you won't have to worry about the prefix, it's just there.

The TOTAL CHARACTERS, or LENGTH, is important in conjunction with STARTING CHARACTER in determining what keys, on the Apple keyboard, will access your font characters. The INDEX KEYS are arranged serially starting with the exclaimation point (!), and ending with the lowercase tilde (~). There are 94 INDEX KEYS, and thus 94 possible characters per set. The following chart illustrates the sequential order of the INDEX KEYS, which by the way, is derived from their ASCII numerical order.

THE INDEX KEYS
SHOWN IN SEQUENTIAL ORDER - START AT THE EXCLAIMATION POINT (!), THEN READ COLUMNS DOWN, FROM LEFT TO RIGHT.

	(	0	8	@	H	P	X	h	p	x
!	)	1	9	A	I	Q	Y	a	i	q	y
"	*	2	:	B	J	R	Z	b	j	r	z
#	+	3	;	C	K	S	[	c	k	s	{
$	,	4	<	D	L	T	\	d	l	t	|
%	-	5	=	E	M	U	]	e	m	u	}
&	.	6	>	F	N	V	^	f	n	v	~
'	/	7	?	G	O	W	_	g	o	w	

TOTAL CHARACTERS then, is the number of characters in your set, and STARTING CHARACTER is where your set begins in the sequence of INDEX KEYS. So, when choosing values for these parameters, ask yourself: "What is going to be included in this set?". If you're going to create a set of capital letters only, choosing "A" as the STARTING CHARACTER, and "26" for the TOTAL CHARACTERS makes sense. If you're making a set of specialized symbols, you may want to assign them to keys that hold some mnemonic value. Remember though, that the set must be an unbroken sequence of INDEX KEYS.

The HORIZONTAL SIZE and VERTICAL SIZE of your set determine how big each character may be. They're both counted in pixels, "picture elements", or dots. The normal type-face your Apple prints in is 5 pixels wide by 7 tall. FONTRIX characters may be as large as 32 x 32. The character cell size you choose represents the space allowable for each character. The characters don't necessarily have to all fill the space from wall to wall, but it is advisable to choose the smallest practical cell size for your set. It will result in savings of both development time and space on your disk.

The last SET PARAMETER, PROPORTIONAL, governs the spacing of letters within a printed word. PROPORTIONAL is a binary proposition, it's either yes or no. If you choose no, the characters, when printed, will be surrounded by whatever empty space that's included in the cells they were created in. If you choose yes, then the space printed between characters will be only what is indicated by you with the SPACE BETWEEN CHARACTERS function (see the GRAPHIC WRITER COMMAND KEYS, Chapter 2).

As to which you should select, it depends on what use the font is to be put to. Proportional sets are best for textual printed matter - words. Most reading material is printed proportionally. Non-proportional sets are best for uses where the character cell functions as a "building block", and uniformity of size and spacing is important. For example, in building border designs, or imitating the Apple text screen, which is printed in a non-proportional font (notice the extra space surrounding the "I" or the period).

When you have chosen the new font's parameters, press (RETURN) alone to accept them. You'll then be presented with the FONT EDITOR menu again, where we'll select option (E), EDIT SET, and begin...

CREATING THE CHARACTERS

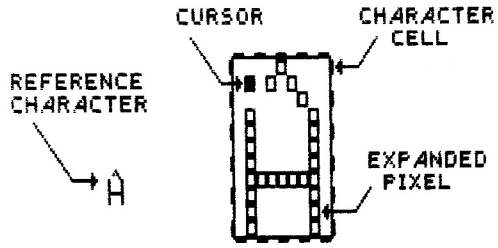
EDIT SET

Upon entering EDIT SET you'll encounter the by now familiar list of the INDEX KEYS. A cursor will be flashing over the index you chose as the STARTING CHARACTER. The first bit of work on your font is selecting an INDEX KEY to store a character in. This is done by moving the cursor over your chosen key. Use the ⟨I⟩ ⟨J⟩ ⟨K⟩ ⟨M⟩ keys for this. When the cursor is positioned, press ⟨RETURN⟩ to enter SINGLE CHARACTER EDIT MODE. Whatever you create in the character cell that appears now will be stored in a spot addressable from the INDEX KEY you just chose.

CREATION

The first you'll see of EDIT SINGLE CHARACTER MODE is the CHARACTER CELL. It looks like a large postage stamp. There will be a pause while FONTRIX looks through the cell to determine if a character has already been created here. If you are re-editing a character you'll see it appear dot by dot in expanded form as it's read onto the screen. A referencial version of the expanded character will have already materialized in its place to the left of the cell. If the cell is blank, sit tight until FONTRIX has finished its read.

When a flashing cursor pops up in the upperleft corner of the cell, you're ready to edit. The following illustration shows the EDIT SINGLE CHARACTER screen as it would appear in the process of creating a capital "A".



SOME EDITING FEATURES

THE BASICS

Moving the EDITOR cursor around the cell is done once again with the (I) (J) (K) (M) keys. A little experimentation will prove that it "wraps" four ways - that is, moving through any of the four cell walls will deposit the cursor at the opposite wall. You'll also find that the number of cursor moves accross and down correspond exactly to the horizontal and vertical cell sizes you chose in NEW SET.

You can activate a pixel by first moving the EDITOR cursor to the desired spot in the same way you moved the SET cursor to choose your INDEX KEY. To turn a pixel on, press the (SPACE BAR). To turn a pixel off, press the (SPACE BAR). Simple as that.

THE SNAZ

Besides selectively activating pixels to form a character, there are some other editing features that contribute to your creationary zeal.

REPOSITIONING A CHARACTER

What would you do if you had been working on a character and found that it was beginning to get a bit cramped on one side of the cell while the other side had room to spare? Or perhaps the character is too high off the baseline to fit in with the rest of the set, and you'd like it a little lower?

Press (CTRL) (P) of course! You knew it all along. (CTRL) (P), POSITION, will allow you to move the entire character within the cell in the same way you move the cursor, with the (I) (J) (K) (M) keys. When you press (CTRL) (P) the cursor will disappear from the cell, and a border will materialize around the reference character, indicating that the (I) (J) (K) (M) keys have assumed thier new function.

Watch the reference character as you move, and be careful not to move it past the surrounding border, especially the top and left boundaries, because these demarkations will cut off that part of the character that passes their walls. (Go ahead and use this situation if you want to truncate a character, it doesn't have any other adverse affects.)

When you've moved the character to the desired spot, press any other key besides the (I) (J) (K) (M) keys, and you'll see the cell clear momentarily and refill with the repositioned character. The EDITOR cursor will reappear, and you're ready to continue editing.

ERASING THE CELL

Now you've done it. You've been merrily turning pixels on and off, and suddenly it hits you...boy, that character is UGLY! You want it gone. You want to start over. Press (CTRL) (E), and ERASE. The cell will clear, the insipid reference character will vanish, and you have a clean slate. Nobody saw that? Good. Let's start over again.

RETURNING WITH OR WITHOUT

When you've got a character you're happy with, and are ready to move on to another one, press (RETURN). That will return you to the EDIT SET screen, and store your character in the INDEX KEY space you'd chosen. You're ready to choose another INDEX, and create another character.

Suppose though, that you had decided to re-edit a character you had already stored. And as you worked on it, the creeping suspicion arose that you liked it better as it was. No worries - just press (CTRL) (X). You'll return to the EDIT SET screen as if you'd pressed (RETURN), but, the character stored will be exactly as it was before you made those last less than fully satisfying changes.

DUPLICATING CHARACTERS

You've created and stored a character, a "C" for example. You notice that if you just added a little, it would do nicely for this set's "O", and a little more would make a wonderful "Q".

So, there's that "C" blinking at you from its place on the EDIT SET screen. Let's make a bunch of them, and scatter them about in the INDEX spots where they'll get used in other characters. The easy way is to use command (C), COPY.

Press (C) once. The list of commands located at the top right of the EDIT SET screen will be replaced by the COPY function instructions. They'll direct you to move the cursor over the INDEX KEY you want to copy from, the ORIGIN. This is done with those versatile (I) (J) (K) (M) keys. In our example, the cursor is already on the correct INDEX - "C". Press (C) again to input the ORIGIN. The instructions are asking that you input the INDEX to be copied to, the TARGET, so move the cursor to the "O" INDEX and press (C) again to input the TARGET.

The COPY is now complete. You can go in and add that vertical piece to your "C" and turn it into an "O", after which the "O" can be copied to the "Q" INDEX for further modifications.

SAVING YOUR FONT

Whenever your font is complete, or you just feel like taking a break, leave EDIT SET by pressing (Q). You'll see the FONT EDITOR menu on screen, from which we'll choose option (S), SAVE SET.

The SAVE SET screen will fill your monitor. All of the current font's SET PARAMETERS are displayed in the center. The SAVE SET menu appears just below them. There are three options from the menu:

Q - returns you to the FONT EDITOR menu (if perhaps you're in SAVE SET by mistake).

C - brings you to CHANGE SET PARAMETERS, where you can make any last minute changes to the font's name, size or whatever.

S - saves your font to disk. Remember, you'll need an initialized disk handy to receive the font, because the FONTRIX SYSTEMS disk is to full to hold another one.

WRITING IN FONTS

You can use your fonts to write on the high resolution screen in the GRAPHIC WRITER region (option (G) from the SYSTEMS menu). The font must be loaded into memory after you enter the WRITER region. This is done with option (C), CHOOSE FONT (see chapter 2).

Use the fonts to write on GRAFFILES, or any Hi-res graphic you've created (including graphics created with other software packages). Or, create new graphic files with the wide variety of fonts you have access to.

Remember, the INDEX KEYS you stored each character in from EDIT SET are now used from the keyboard to access the character on screen. If you're working with a font composed of symbols or shapes that have no direct corespondence with the letters on your keyboard, you may find it helpful to keep a chart showing which character is assigned to what key.

A map of the keyboard is provided in Appendix D. You're welcome to photocopy it to use as a reference chart for your fonts. There is space in each key-block on the map for you to write in your characters. Reference charts of the fonts that are included on the SYSTEMS disk can also be found in Appendix D.

APPENDIX A
TROUBLE SHOOTING

- APPENDIX A -

TROUBLE SHOOTING

The following section is organized by FONTRIX program. This section in many cases repeats warnings or suggestions in the text of the manual, so for more complete explanations of things you can turn to the appropriate section of the manual.

HELLO...

MY DISK WON'T BOOT. The FONTRIX disk does not have a write protect tab on it. It must not have this tab so that it can be configured. This does mean that you can erase portions of the disk. We suggest that you make a backup first thing, but if its too late you can send the original disk to us for an update. The update will cost you ten dollars.

DEMO...

MY DEMO CRASHES WITH FILE NOT FOUND. Most likely you or someone has deleted a file from the disk. Try running the demo and if it crashes with FILE NOT FOUND IN 250, type (250) (RETURN) (RUN)(RETURN).

CONFIGURE...

I CRASH WITH A FILE NOT FOUND ERROR. Oh-oh. You did make a backup, didn't you? Most likely you have DELETED a file from the FONTRIX disk. It is essential that ALL the files on the FONTRIX disk remain there.

I CRASH WITH AN I/O ERROR. Two possiblities, either the disk itself has a bad sector on it or you may have LOCKED one of the files with the prefix LIB. These files MUST NOT BE LOCKED.

I CRASH WITH A FILE LOCKED ERROR. When you purchased your FONTRIX disk some of the files were not LOCKED. This was for a reason. Please unlock all of the following: CONFIG.FX, CONFIGURATION, GRIN1.FX, GRX00.FX, and all of the files that start with the prefix LIB.

FX.EDIT...

I CRASHED WHILE WORKING ON A FONT THAT ISN'T SAVED. Whatever the reason, stray lightning static or having pressed RESET, you can reenter the program by typing (RESET)(FP)(RETURN)(RUN FONTRIX)(RETURN). This will give you the SYSTEMS MENU. Now before you do anything else, select (F) from the MENU and go back the to FONT EDITOR. If your font is still in memory, its name should appear above the FONT EDITOR MENU. (WHEW)

FX.WRITE...

I KNOW YOU WARNED ME, BUT I PRESSED RESET WHILE WORKING ON A GRAFFILE. Well here's the bad news. If the graffile was new and had never been closed, its GONE forever. Not only that, but there is now space allocated on that graffile disk that cannot be recovered without reinitializing the disk. The other files on the disk should still be OK though, so FID them off the disk and then reinitialize it. The GOOD news is that if you had at least once closed the GRAFFILE the only thing that is lost is some time. First press (RUN)(RETURN). You should have the GRAPHIC WRITER MENU. Now take the SAVE A GRAPHIC option. Save your current screen to disk. Next OPEN the GRAFFILE you had been working on, and scroll over to where the screen shows the same window onto your graffile as when you crashed. You can now LOAD the graphic screen you had saved on disk to that spot.

I'M LOST IN SPACE ON THE GRAPHIC SCREEN. We know there are a lot of functions and modes you can set. If you have lost the cursor or something equally confusing, try first pressing (RETURN)(RETURN)(CTRL-D)(CTRL-Z). This should release any windows and place the cursor in the upper left corner. If you can't move the cursor by pressing the (SPACE BAR) twice, you are in graphics mode so press (CTRL-G) to return to normal mode. If you cant see any characters being typed, first try resetting the foreground color to 31 (white) by (CTRL-F)(3)(1). If symbols and numbers can be typed, but not letters then you probably are using a font without lowercase letters so try (CTRL-C). Another possible cause for confusion is being in overlay mode when your background color is equal to the foreground color.

I'M STILL LOST IN SPACE ON THE GRAPHICS SCREEN. Well here's a last resort. (It won't hurt your graphic, so don't worry) Press (RETURN)(RETURN)(CTRL-Q). This will return you

to the GRAPHIC WRITER MENU. Now go back to the SYSTEMS MENU, and rerun GRAPHIC WRITER. This will give you all the default values that are listed in the full explanation of the GRAPHIC WRITER command keys in Chapter 2.

GRAPHICS DUMP...

MY PRINTER HANGS. First you'll need to get control back. Press (RESET)(RETURN) and type (RUN)(RETURN). This will give you back the GRAPHICS DUMP MENU. We would suggest that you recheck the configuration by Quitting to the systems menu. Does the SYSTEMS MENU list exactly your printer, card and slot? If not, reconfigure. Another possibility for printer hang is if you turned your printer on-line AFTER the GRAPHICS DUMP had prompted you. If the GRAPHICS DUMP starts to send information before the printer is ready to receive it, some printers don't know what to do and go off into space.

DISK ACCESS...

I GET AN I/O ERROR NO MATTER WHAT I TRY TO DO WITH DISK ACCESS. Most likely you have changed disk controller slots from the slots that the FONTRIX disk was configured for. Reconfigure the disk and when the slot prompt comes up, you will see displayed the actual slot that your disk is in. Just press RETURN at that point and after you finish answering the questions in the configure program you will return to the SYSTEMS MENU and all should be well.

APPENDIX B
PRINTER SWITCH SETTINGS

PRINTER SPECIFIC GRAFFILE SIZING CHARTS

The inches/sector chart lists in hundredths of an inch the exact printed size of a single sector for each printer (in magnification One). NOTE: one screen = 5x6 sectors. Each horizontal sector = 56 screen dots, each vertical sector = 32 screen dots. The sectors/page chart lists the maximum whole sectors printable on a page.

INCHES PER SECTOR — **SECTORS PER PAGE** — Given for 3 magnifications

PRINTER		INCHES PER SECTOR AXIS		SECTORS PER PAGE								
				AXIS: HORIZONTAL						VERTICAL		
				PAPER SIZE: 8.5 Inch			14 Inch			11 Inch		
MANUFACTURER	MODEL(S)	HORIZONTAL	VERTICAL	MAGNIFICATION 1	2	3	1	2	3	1	2	3
ANADEX	9001-B, COLOR SCRIBE 9501-B, SILENT SCRIBE	.78	.44	10	5	3	17	8	5	24	12	8
APPLE	DMP, IMAGEWRITER, SCRIBE	.36	.44	23	11	7	38	19	12	24	12	8
CANON	PJ-1080A	.67	.51	10	5	3	–	–	–	19	9	6
CENTRONICS	353, 358	.85	.44	10	5	3	16	8	5	24	12	8
C. ITOH	8510, 1550	.34	.45	25	12	8	41	20	13	24	12	8
	8510 (IBM ROM)	.46	.43	18	9	6	–	–	–	25	12	8
DATA PRODUCTS	4800, 5600	.67	.34	12	6	4	20	10	6	30	15	10
	8050 (LOW DENSITY)	.67	.38	12	6	4	20	10	6	27	13	8
	PRISM 80, PRISM 132	.67	.38	12	6	4	20	10	6	27	13	8
	8050 (HIGH DENSITY)	.33	.38	25	12	8	42	21	14	27	13	9
	8051 (LOW DENSITY)	.67	.39	12	6	4	20	10	6	27	13	9
	8051 (MEDIUM DENSITY)	.40	.39	21	10	7	35	17	11	27	13	9
	8051 (HIGH DENSITY)	.20	.39	32	21	14	70	35	23	27	13	9
DATASOUTH	DS-180	.76	.44	11	5	3	18	9	6	24	12	8
DIABLO	C-150	.44	.26	19	9	6	–	–	–	40	20	13
EPSON	FX-80, FX-100, JX-80,	.46	.43	18	9	6	30	15	10	25	12	8
	LQ-1500, RX-80,	.46	.43	18	9	6	30	15	10	25	12	8
	MX-80 GRAFTRAX PLUS	.46	.43	18	9	6	30	15	10	25	12	8
	MX-100 GRAFTRAX PLUS	.46	.43	18	9	6	30	15	10	25	12	8
	FX-80 (HIGH DENSITY)	.23	.43	32	18	12	60	30	20	25	12	8
	FX-100 (HIGH DENSITY)	.23	.43	32	18	12	60	30	20	25	12	8
	JX-80 (HIGH DENSITY)	.23	.43	32	18	12	60	30	20	25	12	8
	LQ-1500 (HIGH DENSITY)	.30	.16	27	14	9	46	23	15	60	30	20
	MX-80 GRAFTRAX 80	.46	.39	18	9	6	–	–	–	27	13	9
	MX-100	.46	.44	18	9	6	30	15	10	23	11	7
HEWLETT-PACKARD	2225C THINKJET (ALTERNATE MODE)	.29	.33	29	14	9	–	–	–	32	16	10
	LASERJET (75 DPI)	.75	.42	11	5	3	–	–	–	23	11	7
	(100 DPI)	.56	.32	15	7	5	–	–	–	18	9	6
	(150 DPI)	.38	.21	22	11	7	–	–	–	12	6	4
	(300 DPI)	.18	.11	32	23	15	–	–	–	6	3	2

NOTE TO HP USERS:

Due to certain hardware arrangements, the Hewlett-Packard LaserJet will not perform all of the functions available from the Fontrix Graphic Dump. Neither greyscale printing nor automatic larger than page is possible. Also, due to buffer size limitations, the printable graphics area per page is inversely proportional to the print density. Only at the HP's lowest print density, 75 dpi, can an entire page be printed.

INCHES PER SECTOR

SECTORS PER PAGE

Given for 3 magnifications

PRINTER		INCHES PER SECTOR		SECTORS PER PAGE								
		AXIS		AXIS	HORIZONTAL					VERTICAL		
				PAPER SIZE	8.5 inch			14 inch			11 inch	
MANUFACTURER	MODEL(S)	HORIZONTAL	VERTICAL	MAGNIFICATION	1	2	3	1	2	3	1	2	3
IBM	COLOR PRINTER (LOW DENSITY)	.68	.37		12	6	4	20	10	6	26	13	8
	(MEDIUM DENSITY)	.39	.37		21	10	7	35	17	11	26	13	8
	(HIGH DENSITY)	.19	.37		32	22	14	73	36	24	26	13	8
	GRAPHICS PRINTER	.46	.43		18	9	6	–	–	–	25	12	8
	(HIGH DENSITY)	.23	.43		32	18	12	–	–	–	25	12	8
INFORUNNER	RITEMAN PLUS	.46	.43		18	9	6	–	–	–	25	12	8
	RITEMAN II, 15	.46	.43		18	9	6	30	15	10	25	12	8
JDL	760 (LOW DENSITY)	.94	.53		9	4	2	14	7	4	58	29	19
	760 (HIGH DENSITY)	.32	.18		26	13	8	43	21	14	58	29	19
LEGEND	1080	.59	.43		14	7	4	–	–	–	25	12	8
	1080 (HIGH DENSITY)	.35	.43		24	12	8	–	–	–	25	12	8
	CP-VII (16 BIT MODE)	.46	.27		18	9	6	30	15	10	39	19	13
	CP-VII (8 BIT HIGH DENSITY)	.24	.50		32	17	11	58	29	19	21	10	7
MANNESMANN-TALLY	MT-160L, MT-180L	.41	.50		20	10	6	34	17	11	21	10	7
	SPIRIT 80	.35	.40		24	12	8	–	–	–	26	13	8
NEC	8023, 8025	.34	.45		25	12	8	41	20	13	24	12	8
	P2-3, P3-3 (LOW DENSITY)	.46	.27		18	9	6	30	15	10	38	19	12
	P2-3, P3-3 (HIGH DENSITY)	.46	.27		18	9	6	30	15	10	40	20	13
OKIDATA	82A, 83A	.93	.44		9	4	3	15	7	4	24	12	8
	84	.39	.41		21	10	7	35	17	11	26	13	8
	84 STEP 2, 93	.78	.40		10	5	3	19	8	5	26	13	8
	92	.78	.40		10	5	3	–	–	–	26	13	8
	92, 93 (PLUG 'N PLAY)	.46	.43		18	9	6	30	15	10	25	12	8
	2410	.39	.22		21	10	7	35	17	11	48	24	16
SIEMENS	PT 88, PT 89	.78	.44		10	5	3	19	8	5	24	12	8
	(HIGH DENSITY)	.54	.44		15	7	5	25	12	8	24	12	8
	(IBM MODULE LOW DENSITY)	.46	.43		18	9	6	30	15	10	25	12	8
	(IBM MODULE HIGH DENSITY)	.23	.43		32	18	12	60	30	20	25	12	8
STAR MICRONICS	DELTA 10, 15	.46	.44		18	9	6	30	15	10	24	11	7
	GEMINI 10X, 15X	.46	.44		18	9	6	30	15	10	24	11	7
	(HIGH DENSITY)	.24	.44		32	17	11	58	29	19	24	11	7
	DELTA 10, 15 PC	.46	.43		18	9	6	30	15	10	25	12	8
	(HIGH DENSITY)	.23	.43		32	18	12	60	30	20	25	12	8
TEXAS INSTRUMENTS	855, 865 (DP MODE)	.78	.45		10	5	3	19	8	5	23	11	7
	855, 865 (WP MODE)	.39	.45		21	10	7	35	17	11	23	11	7
TOSHIBA	1340, 1350, 1351	.30	.15		20	14	9	46	23	15	60	30	20

PRINTER SWITCHES AND SETTINGS

Some of your printer switches may be labelled off/on instead of open/closed. In those cases off means open and on means closed. On this chart, o means open and c means closed. Those settings marked with an asterisk (*) are required settings. The others are the ones we have found to be useful, but may be changed to suit your own needs.

MANUFACTURER	MODEL	DIP SWITCH SETTINGS AND PRESSURE PAD SETUPS
ANADEX	9001-B 9501-B SCRIBE SERIES	sw1: 1 2 3 4 5 6 7 8 9 10 o c c o c o o o - - o c c o c c o o* o o sw2: 1 2 3 4 5 6 7 8 9 10 o c o o o o o o* - - o* o o o o o o c o o
APPLE	DMP IMAGEWRITER	sw1: 1 2 3 4 5 6 7 8 o c o o c* c c* o* o o o o c c o o* sw2: 1 2 3 4 5 6 7 8 o c o o o c* c o c* c* o* o
CANON	PJ1080-A	sw1: 1 2 3 4 5 6 c c c c o* c
CENTRONICS	353 356	SET FOR NO AUTO-LINEFEED and 6 LINES PER INCH
C. ITOH	8510	sw1: 1 2 3 4 5 6 7 8 o c o o o o c o* sw2: 1 2 3 4 5 6 7 8 c o o o o o* c c
	1550	AUTO-LINEFEED SWITCH MUST BE OFF
DATAPRODUCTS	480-G 680-G PRISM 80 132	sw1: 1 2 3 4 5 6 7 o c o o* o* o c* o c o o* o* o c* sw2: 1 2 3 4 5 6 7 c o c o c o c c o c o c o c
	8060 8061	SET FUNCTION #08 = 0024 and FUNCTION #09 to OFF
DATASOUTH	D8-180	SET FUNCTION #36 to OFF and FUNCTION #48 to ON
DIABLO	C-150	sw1: 1 2 3 4 5 6 7 8 o o c c c o c o*
EPSON	MX-80 Graftrax80 MX-80 Graftrax+ MX-100 MX-100 Graftrax+ FX-80 FX-100 JX-80 LQ-1500 RX-80	switch 1: 1 2 3 4 5 6 7 8 o c* c* o o o o c* o c* c* o o o o c* o* o* o o o* c c c o* o* o o o* c c c o o o c o c c c o o o c o c c c c c c o o o o c switch 2: 1 2 3 4 o o o o* o* o o o o* o* c c o* c* c c o* c* c c o* o* c c o* o* o o o* o
		SET AUTO-LINEFEED to OFF
HEWLETT-PACKARD	THINKJET 2225-C	sw1: 1 2 3 4 5 6 7 8 o* o o o* c* c o o
IBM	ALL PRINTERS	SET AUTO-LINEFEED to OFF
INFORUNNER	ALL PRINTERS	SET AUTO-LINEFEED to OFF and SET for 8 Data Bits
LEGEND	1080 CP-VII	sw1: 1 2 3 4 5 6 7 8 9 10 11 12 o o o o* o* o o o o o o o c c c c o o* o* o* o* sw2: 1 2 3 4 5 6 7 8 - - - - - - - - o c o o o o c c
MANNESMANN TALLY	SPIRIT-80	sw1: 1 2 3 4 5 6 7 8 o o o o o o o c sw2: 1 2 3 4 o o o* o*
	MT-160L MT-180L	SET CR IMPLIES LF = NO
NEC	8023 8025 P2-P3 Low Density 6303 IF Low Density P2-P3 HI Density 6303 IF HI Density	switch 1: 1 2 3 4 5 6 7 8 o c o o o c o o o o* o o c o* c o o c o o c* o c c o o o o* c c o o* o c o o o* o c c sw2: 1 2 3 4 5 6 7 8 c c o o o o c o
OKIDATA	82-A 83-A 84 & 84 STEP 2 92 93 2410	sw1: 1 2 3 4 5 6 7 8 o o o o c* o* o o c* o* o o o o o o o o o o c* o* o o SET AUTO-LINEFEED to OFF
SIEMENS	PT-88 PT-89	sw1: 1 2 3 4 5 6 7 8 9 10 c o* c c* c c c c* c
STAR MICRONICS	GEMINI 10-X 15-X DELTA 10 15	sw1: 1 2 3 4 5 6 7 8 c c c c c c c c c* c c c c* c c c sw2: 1 2 3 4 c c o o* c o o* o*
TEXAS INSTRUMENTS	855 865 DP MODE 855 865 WP MODE	sw1: 1 2 3 4 5 6 7 8 c* c* o* o* c* c* c* c* c* c* o* c* c* c* c* c*
TOSHIBA	1340 1350 1351	Switch 2 ON, all others OFF / Switches 1 & 5 ON, all others OFF

- APPENDIX B.1 -

SERIAL INTERFACES

We do NOT recommend using a serial interface card for graphics applications. There are problems specific to serial cards that are most easily bypassed by using a PARALLEL interface to your printer --- but if you are intent upon using a serial interface, then you should read this section carefully.

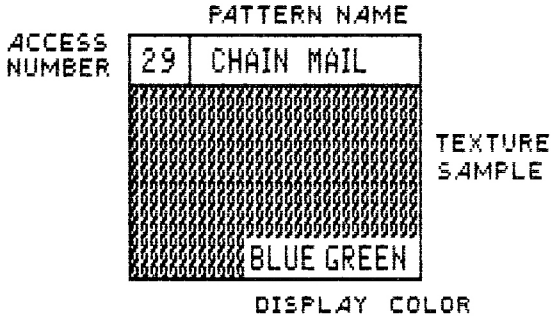
The most important obstacles to overcome when using a serial card involve the loss of characters in transmission. One lost character can send the remainder of a graphic into garbage, or cause your vertical lines to become a jumble of disconnected vertical line segments printed all over your carefully formatted page. Lost characters can be the result of a too-high baud rate setting, or of a failure to monitor your printer's BUSY line. We recommend that the baud rate be set to 1200 or less; it may be possible to print graphics with baud rates as high as 4800, but higher speeds will require successful monitoring of the BUSY signal. In many cases, monitoring the BUSY will require special cabling between the card and printer; problems that were not appararent when printing text will become clearly manifest in graphics mode if the BUSY is not being received and correctly interpreted by the card.

The lower baud rates required for unerring graphics transmission give rise to the second major obstacle to using a serial interface, that of execution speed. In almost every case, your printer can print graphics MUCH faster when using a parallel card --- and you may well decide that the time you save by using a parallel card to print a series of large graphics more than justifies the purchase of the card.

APPENDIX C
PATTERN SAMPLER

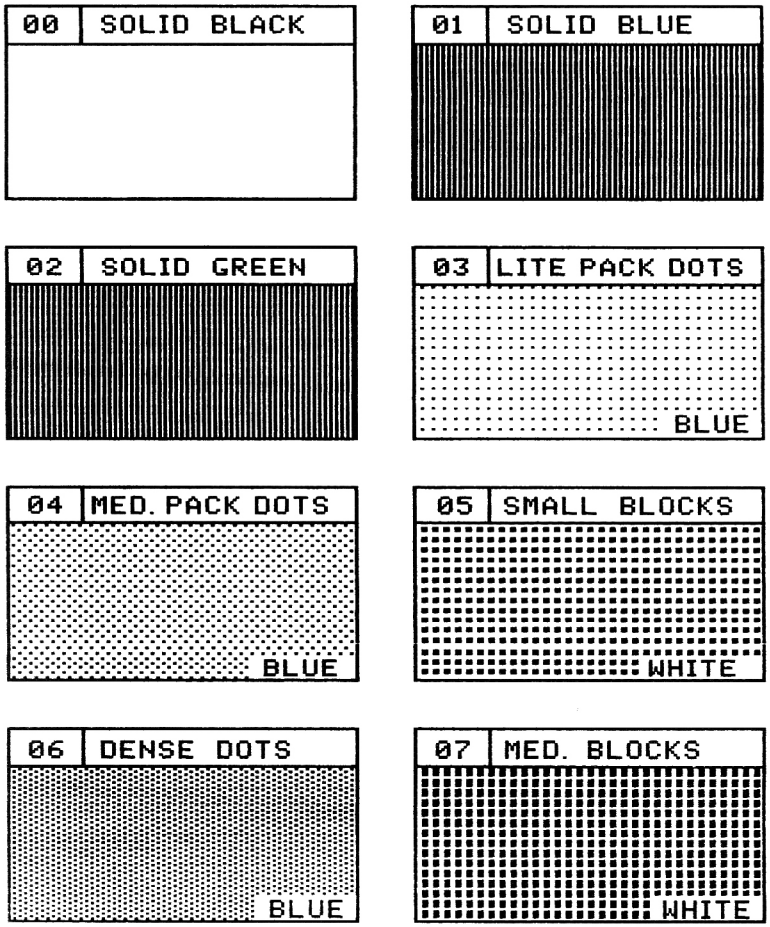
Foreground-Background Textures

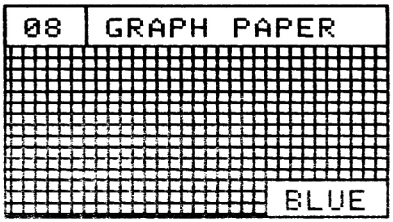
LEGEND:

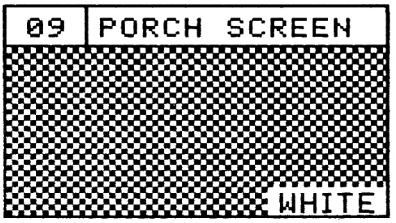


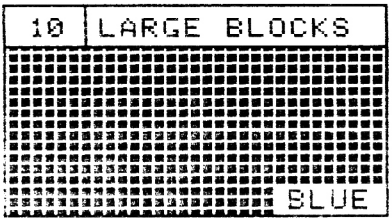
NOTE: DISPLAY COLORS REFER TO THE TINT DISPLAYED ON A COLOR MONITOR. ACTUAL COLOR MAY VARY DEPENDING ON THE MONITOR'S ADJUSTMENT.

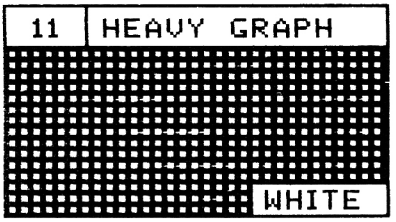
WHEN DUMPED TO A PRINTER, ALL TEXTURES PRINT IN BLACK AND WHITE. REMEMBER THAT WHITE LINES ON THE MONITOR SCREEN PRINT AS BLACK LINES ON PAPER, UNLESS "NORMAL" PRINT MODE IS SPECIFIED.

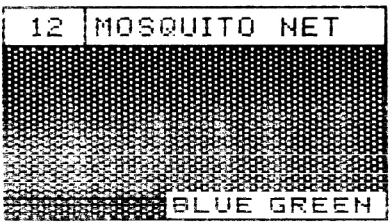

00 SOLID BLACK
01 SOLID BLUE
02 SOLID GREEN
03 LITE PACK DOTS
BLUE
04 MED. PACK DOTS
BLUE
05 SMALL BLOCKS
WHITE
06 DENSE DOTS
BLUE
07 MED. BLOCKS
WHITE

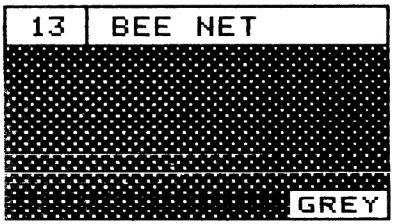

08
GRAPH PAPER
BLUE


09
PORCH SCREEN
WHITE

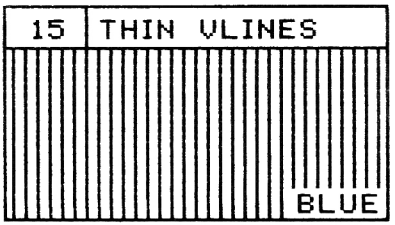

10
LARGE BLOCKS
BLUE

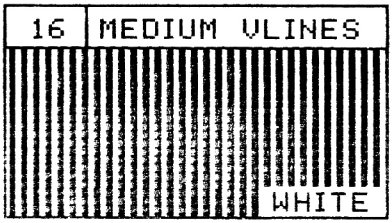

11
HEAVY GRAPH
WHITE

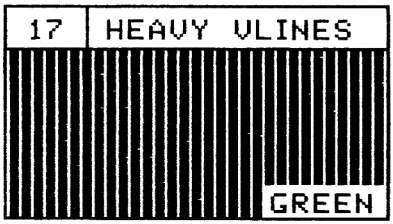

12
MOSQUITO NET
BLUE GREEN

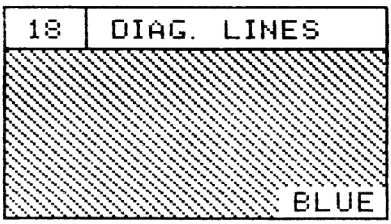

13
BEE NET
GREY


14
OLD CAR SEAT
WHITE

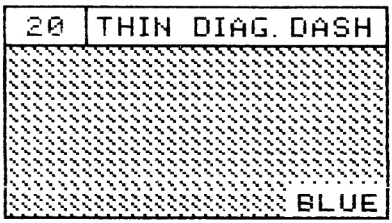

15
THIN VLINES
BLUE

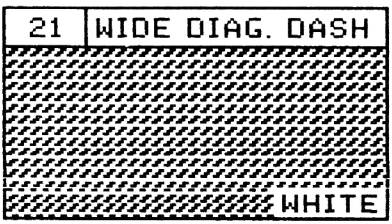

16
MEDIUM VLINES
WHITE

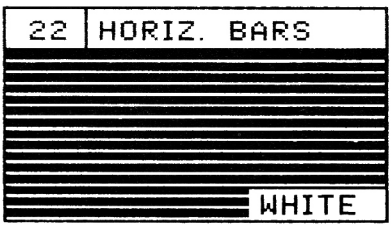

17
HEAVY VLINES
GREEN

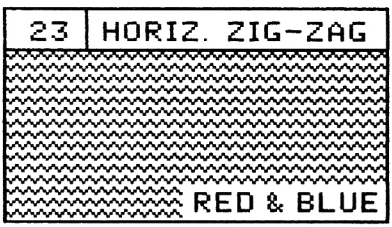

18
DIAG. LINES
BLUE

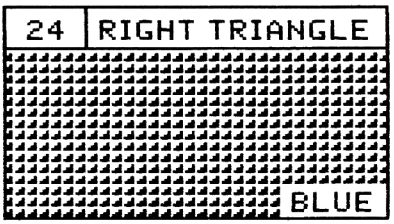

19
DIAG. BARS
WHITE

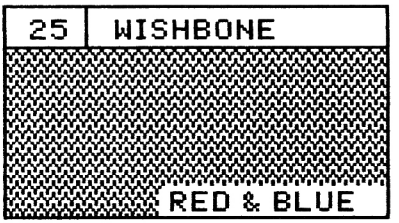

20
THIN DIAG. DASH
BLUE

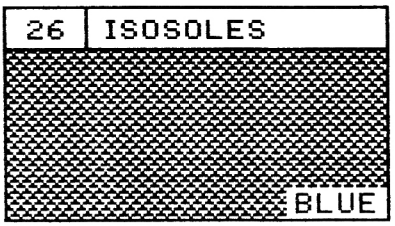

21
WIDE DIAG. DASH
WHITE

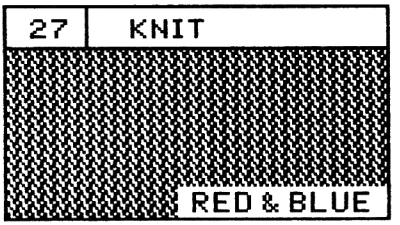

22
HORIZ. BARS
WHITE

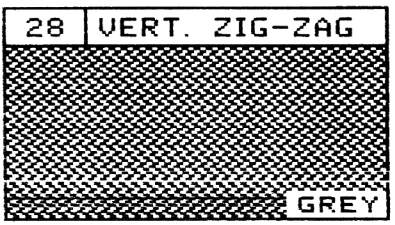

23
HORIZ. ZIG-ZAG
RED & BLUE

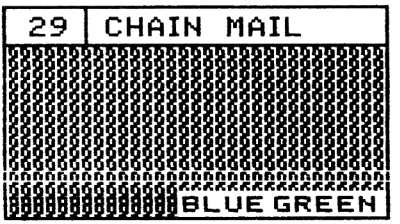

24
RIGHT TRIANGLE
BLUE

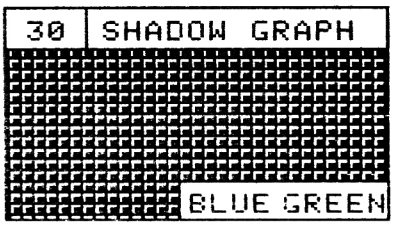

25
WISHBONE
RED & BLUE

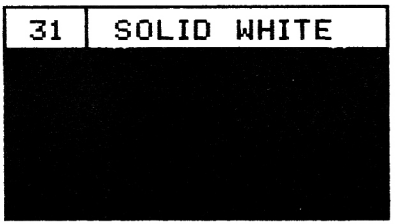

26
ISOSOLES
BLUE


27
KNIT
RED & BLUE


28
VERT. ZIG-ZAG
GREY


29
CHAIN MAIL
BLUE GREEN


30
SHADOW GRAPH
BLUE GREEN


31
SOLID WHITE

APPENDIX D
FONT SAMPLER

SET NAME: ALGEBRA
HORIZONTAL: 13 VERTICAL: 12
PROPORTIONAL: YES

SPACE	NOT USED	0	0	@	∞	P	δ	`	ᵃ	p	𝓅
!	!	1	1	A	→	Q	θ	a	𝒶	q	𝓆
"	"	2	2	B	—	R	✓	b	𝒷	r	𝓇
#	∀	3	3	C	≡	S	∫	c	𝒸	s	𝓈
$	∃	4	4	D	∂	T	∴	d	𝒹	t	𝓉
%	⅋	5	5	E	Σ	U	∪	e	ℯ	u	𝓊
&	∝	6	6	F	𝒻	V	⊥	f	𝒻	v	𝓋
'	'	7	7	G	°	W	∠	g	ℊ	w	𝓌
(	(	8	8	H	⊂	X	x	h	𝒽	x	𝓍
)	)	9	9	I	∩	Y	÷	i	𝒾	y	𝓎
*	·	:	:	J	⊃	Z	←	j	𝒿	z	𝓏
+	+	;	±	K	≤	[	[	k	𝓀	{	{
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-	-	=	=	M	‖	]	]	m	𝓂	}	}
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SET NAME: ASCII
HORIZONTAL: 8 VERTICAL: 9
PROPORTIONAL: YES

SPACE	NOT USED	0	0	@	@	P	P	`	`	p	p
!	!	1	1	A	A	Q	Q	a	a	q	q
"	"	2	2	B	B	R	R	b	b	r	r
#	#	3	3	C	C	S	S	c	c	s	s
$	$	4	4	D	D	T	T	d	d	t	t
%	%	5	5	E	E	U	U	e	e	u	u
&	&	6	6	F	F	V	V	f	f	v	v
'	'	7	7	G	G	W	W	g	g	w	w
(	(	8	8	H	H	X	X	h	h	x	x
)	)	9	9	I	I	Y	Y	i	i	y	y
*	*	:	:	J	J	Z	Z	j	j	z	z
+	+	;	;	K	K	[	[	k	k	{	{
,	,	<	<	L	L	\	\	l	l	|	|
-	-	=	=	M	M	]	]	m	m	}	}
.	.	>	>	N	N	^	^	n	n	~	~
/	/	?	?	O	O	_	_	o	o	rub	NOT USED

SET NAME: ASCII BOLD
HORIZONTAL: 9 VERTICAL: 9
PROPORTIONAL: YES

SPACE	NOT USED	0	0	@	@	P	P	`	`	p	p
!	!	1	1	A	A	Q	Q	a	a	q	q
"	"	2	2	B	B	R	R	b	b	r	r
#	#	3	3	C	C	S	S	c	c	s	s
$	$	4	4	D	D	T	T	d	d	t	t
%	%	5	5	E	E	U	U	e	e	u	u
&	&	6	6	F	F	V	V	f	f	v	v
'	'	7	7	G	G	W	W	g	g	w	w
(	(	8	8	H	H	X	X	h	h	x	x
)	)	9	9	I	I	Y	Y	i	i	y	y
*	*	:	:	J	J	Z	Z	j	j	z	z
+	+	;	;	K	K	[	[	k	k	{	{
,	,	<	<	L	L	\	\	l	l	|	|
-	-	=	=	M	M	]	]	m	m	}	}
.	.	>	>	N	N	^	^	n	n	~	~
/	/	?	?	O	O	_	_	o	o	rub	NOT USED

SET NAME: GREEK
HORIZONTAL: 7 VERTICAL: 9
PROPORTIONAL: NO

SPACE	NOT USED	0	0	@	∞	P	Π	`	`	p	π
!	!	1	1	A	Α	Q	Θ	a	α	q	ξ
"	"	2	2	B	Β	R	Ρ	b	β	r	ρ
#	#	3	3	C		S	Σ	c		s	σ
$	$	4	4	D	Δ	T	Τ	d	δ	t	τ
%	%	5	5	E	Ε	U	Υ	e	ε	u	υ
&	&	6	6	F	Ζ	V	Φ	f	ζ	v	φ
'	'	7	7	G	Γ	W		g	γ	w	
(	(	8	8	H	Η	X	Χ	h	η	x	χ
)	)	9	9	I	Ι	Y	Ψ	i	ι	y	ψ
*	*	:	:	J	Θ	Z	Ω	j	θ	z	ω
+	+	;	;	K	Κ	[	Ι	k	κ	{	{
,	,	<	<	L	Λ	\	\	l	λ	|	|
-	-	=	=	M	Μ	]	]	m	μ	}	}
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/	/	?	?	O	Ο	_	_	o	ο	rub	NOT USED

SET NAME: ITALICS
HORIZONTAL: 13 VERTICAL: 9
PROPORTIONAL: YES

SPACE	NOT USED	0	0	@	@	P	P	`	`	p	p
!	!	1	1	A	A	Q	Q	a	a	q	q
"	"	2	2	B	B	R	R	b	b	r	r
#	#	3	3	C	C	S	S	c	c	s	s
$	$	4	4	D	D	T	T	d	d	t	t
%	%	5	5	E	E	U	U	e	e	u	u
&	&	6	6	F	F	V	V	f	f	v	v
'	'	7	7	G	G	W	W	g	g	w	w
(	(	8	8	H	H	X	X	h	h	x	x
)	)	9	9	I	I	Y	Y	i	i	y	y
*	*	:	:	J	J	Z	Z	j	j	z	z
+	+	;	;	K	K	[	[	k	k	{	{
,	,	<	<	L	L	\	\	l	l	|	|
-	-	=	=	M	M	]	]	m	m	}	}
.	.	>	>	N	N	^	^	n	n	~	~
/	/	?	?	O	O	_	_	o	o	rub	NOT USED

SET NAME: OLD ENGLISH
HORIZONTAL: 28 VERTICAL: 24
PROPORTIONAL: YES

SPACE	NOT USED	0	0	@	@	P	P	`		p	p
!	!	1	1	A	A	Q	Q	a	a	q	q
"	"	2	2	B	B	R	R	b	b	r	r
#	#	3	3	C	C	S	S	c	c	s	s
$	$	4	4	D	D	T	T	d	d	t	t
%	%	5	5	E	E	U	U	e	e	u	u
&	&	6	6	F	F	V	V	f	f	v	v
'	'	7	7	G	G	W	W	g	g	w	w
(	(	8	8	H	H	X	X	h	h	x	x
)	)	9	9	I	I	Y	Y	i	i	y	y
*	*	:	:	J	J	Z	Z	j	j	z	z
+	+	;	;	K	K	[		k	k	{	
,	,	<	<	L	L	\		l	l	|	
-	-	=	=	M	M	]		m	m	}	
.	.	>	>	N	N	^		n	n	~	
/	/	?	?	O	O	_		o	o	rub	NOT USED

SET NAME: PRIMER
HORIZONTAL: 21 VERTICAL: 18
PROPORTIONAL: YES

SPACE	NOT USED	0	0	@	@	P	P	`	`	p	p
!	!	1	1	A	A	Q	Q	a	a	q	q
"	"	2	2	B	B	R	R	b	b	r	r
#	#	3	3	C	C	S	S	c	c	s	s
$	$	4	4	D	D	T	T	d	d	t	t
%	%	5	5	E	E	U	U	e	e	u	u
&	&	6	6	F	F	V	V	f	f	v	v
'	'	7	7	G	G	W	W	g	g	w	w
(	(	8	8	H	H	X	X	h	h	x	x
)	)	9	9	I	I	Y	Y	i	i	y	y
*	*	:	:	J	J	Z	Z	j	j	z	z
+	+	;	;	K	K	[	[	k	k	{	{
,	,	<	<	L	L	\	\	l	l	|	|
-	-	=	=	M	M	]	]	m	m	}	}
.	.	>	>	N	N	^	^	n	n	~	~
/	/	?	?	O	O	_	_	o	o	rub	NOT USED

SET NAME: ROMAN
HORIZONTAL: 9 VERTICAL: 10
PROPORTIONAL: YES

space	NOT USED	0	0	@	@	P	P	`	∞	p	p
!	!	1	1	A	A	Q	Q	a	a	q	q
"	"	2	2	B	B	R	R	b	b	r	r
#	#	3	3	C	C	S	S	c	c	s	s
$	$	4	4	D	D	T	T	d	d	t	t
%	%	5	5	E	E	U	U	e	e	u	u
&	&	6	6	F	F	V	V	f	f	v	v
'	'	7	7	G	G	W	W	g	g	w	w
(	(	8	8	H	H	X	X	h	h	x	x
)	)	9	9	I	I	Y	Y	i	i	y	y
*	*	:	:	J	J	Z	Z	j	j	z	z
+	+	;	;	K	K	[	[	k	k	{	{
,	,	<	<	L	L	\	\	l	l	|	|
-	-	=	=	M	M	]	]	m	m	}	}
.	.	>	>	N	N	^	^	n	n	~	~
/	/	?	?	O	O	_	_	o	o	rub	NOT USED

SET NAME: ROMAN HEADLINE
HORIZONTAL: 23 VERTICAL: 17
PROPORTIONAL: YES

000	NOT USED	0	0	@	@	P	P	`		p	
!	!	1	1	A	A	Q	Q	a		q	
"	"	2	2	B	B	R	R	b		r	
#	#	3	3	C	C	S	S	c		s	
$	$	4	4	D	D	T	T	d		t	
%	%	5	5	E	E	U	U	e		u	
&	&	6	6	F	F	V	V	f		v	
'	'	7	7	G	G	W	W	g		w	
(	(	8	8	H	H	X	X	h		x	
)	)	9	9	I	I	Y	Y	i		y	
*	*	:	:	J	J	Z	Z	j		z	
+	+	;	;	K	K	[		k		{	
,	,	<	<	L	L	\		l		|	
-	-	=	=	M	M	]		m		}	
.	.	>	>	N	N	^		n		~	
/	/	?	?	O	O	_		o		rub	NOT USED

SET NAME: SCRIPT
HORIZONTAL: 11 VERTICAL:12
PROPORTIONAL: YES

SPACE	NOT USED	0	0	@	@	P	P	`	`	p	p
!	!	1	1	A	A	Q	Q	a	a	q	q
"	"	2	2	B	B	R	R	b	b	r	r
#	#	3	3	C	C	S	S	c	c	s	s
$	$	4	4	D	D	T	T	d	d	t	t
%	%	5	5	E	E	U	U	e	e	u	u
&	&	6	6	F	F	V	V	f	f	v	v
'	'	7	7	G	G	W	W	g	g	w	w
(	(	8	8	H	H	X	X	h	h	x	x
)	)	9	9	I	I	Y	Y	i	i	y	y
*	*	:	:	J	J	Z	Z	j	j	z	z
+	+	;	;	K	K	[	[	k	k	{	{
,	,	<	<	L	L	\	\	l	l	|	|
-	-	=	=	M	M	]	]	m	m	}	}
.	.	>	>	N	N	^	^	n	n	~	~
/	/	?	?	O	O	_	_	o	o	rub	NOT USED

SET NAME: SMALL
HORIZONTAL: 7 VERTICAL: 7
PROPORTIONAL: YES

space	NOT USED	0	0	@	@	P	P	`	`	p	p
!	!	1	1	A	A	Q	Q	a	a	q	q
"	"	2	2	B	B	R	R	b	b	r	r
#	#	3	3	C	C	S	S	c	c	s	s
$	$	4	4	D	D	T	T	d	d	t	t
%	%	5	5	E	E	U	U	e	e	u	u
&	&	6	6	F	F	V	V	f	f	v	v
'	'	7	7	G	G	W	W	g	g	w	w
(	(	8	8	H	H	X	X	h	h	x	x
)	)	9	9	I	I	Y	Y	i	i	y	y
*	*	:	:	J	J	Z	Z	j	j	z	z
+	+	;	;	K	K	[	[	k	k	{	{
,	,	<	<	L	L	\	\	l	l	|	|
-	-	=	=	M	M	]	]	m	m	}	}
.	.	>	>	N	N	^	^	n	n	~	~
/	/	?	?	O	O	_	_	o	o	rub	NOT USED

SET NAME:
HORIZONTAL: VERTICAL:
PROPORTIONAL:

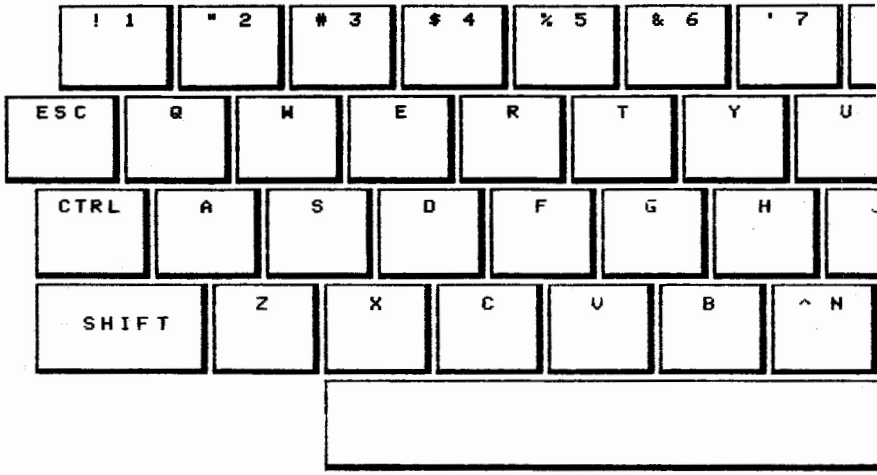
SPACE	NOT USED	0		@		P		`		p	
!		1		A		Q		a		q	
"		2		B		R		b		r	
#		3		C		S		c		s	
$		4		D		T		d		t	
%		5		E		U		e		u	
&		6		F		V		f		v	
'		7		G		W		g		w	
(		8		H		X		h		x	
)		9		I		Y		i		y	
*		:		J		Z		j		z	
+		;		K		[		k		{	
,		<		L		\		l		|	
-		=		M		]		m		}	
.		>		N		^		n		~	
/		?		O		_		o		rub	NOT USED

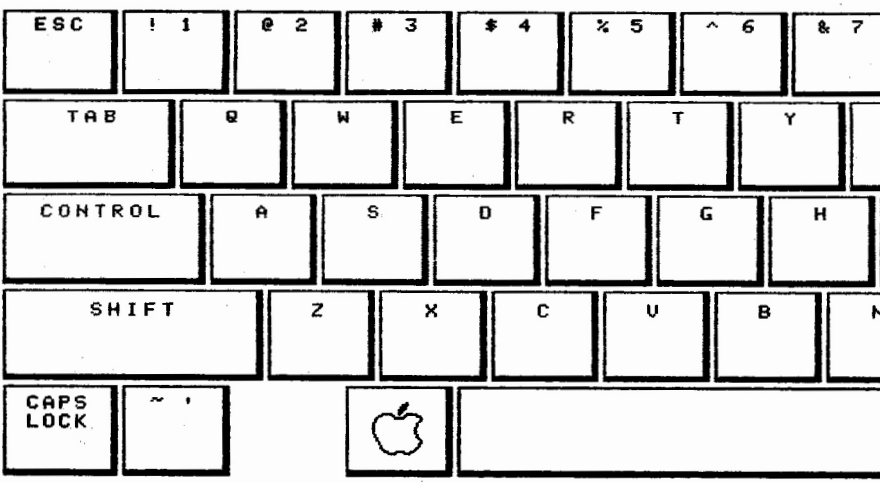
APPENDIX E
THE INDEX KEYS

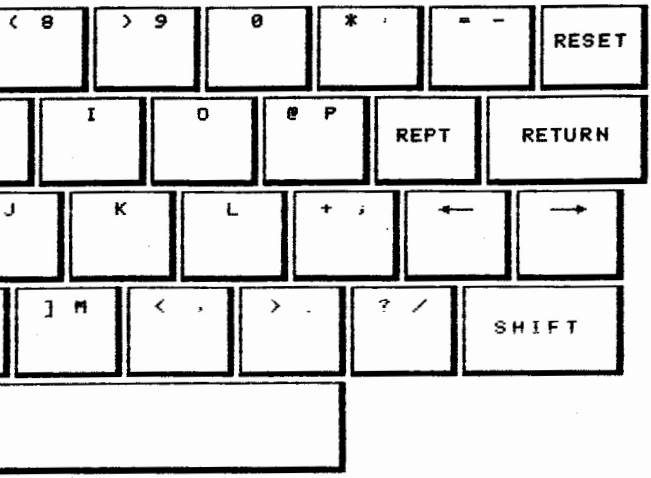
THE INDEX KEYS

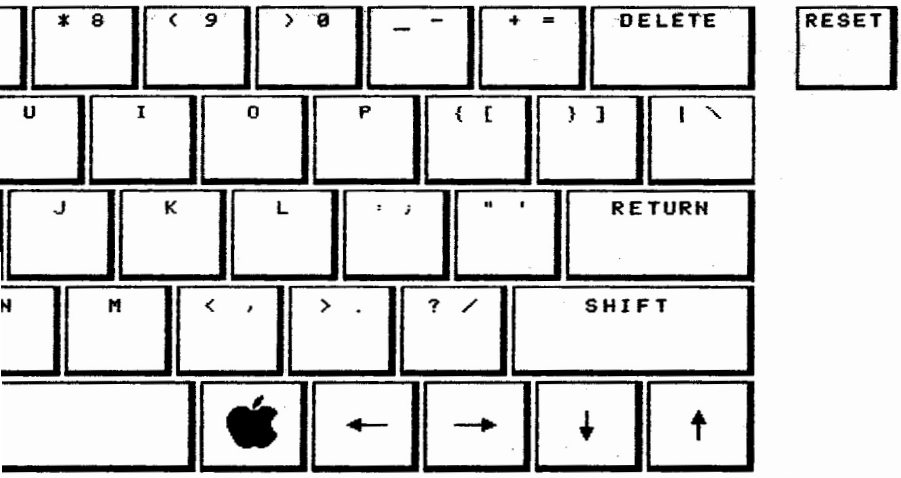
SHOWN IN SEQUENTIAL ORDER - START AT THE EXCLAIMATION POINT (!), THEN READ COLUMNS DOWN, FROM LEFT TO RIGHT.

	(	0	8	@	H	P	X	h	p	x
!	)	1	9	A	I	Q	Y	a	i	q	y
"	*	2	:	B	J	R	Z	b	j	r	z
#	+	3	;	C	K	S	[	c	k	s	{
$	,	4	<	D	L	T	\	d	l	t	|
%	-	5	=	E	M	U	]	e	m	u	}
&	.	6	>	F	N	V	^	f	n	v	~
'	/	7	?	G	O	W	_	g	o	w	


! 1
" 2
3
$ 4
% 5
& 6
' 7
ESC
Q
W
E
R
T
Y
U
CTRL
A
S
D
F
G
H
SHIFT
Z
X
C
V
B
^ N


ESC
! 1
@ 2
# 3
$ 4
% 5
^ 6
& 7
TAB
Q
W
E
R
T
Y
CONTROL
A
S
D
F
G
H
SHIFT
Z
X
C
V
B
CAPS LOCK
~ '


(8
) 9
0
* :
= -
RESET
I
O
@ P
REPT
RETURN
J
K
L
+ ;
] M
< ,
> .
? /
SHIFT


* 8
(9
) 0
_ -
+ =
DELETE
RESET
U
I
O
P
{ [
}]
| \
J
K
L
: ;
" '
RETURN
M
< ,
> .
? /
SHIFT

APPENDIX F

DEFAULTS
MINIMUMS
MAXIMUMS

GRAPHIC WRITER COMMAND CONTROL KEYS

CTRL	FUNCTION	DEFAULT
A	Ask For Help. Shows help screen.	
B	Background Color. +2 digit number (00 to 31)	00 (black)
C	Caps Lock. Selects lowercase or uppercase.	Uppercase
D	Default Window. Resets window to full screen.	
E	Erase Window. Erases to background color.	
F	Foreground Color. +2 digit number (00 to 31)	31 (white)
G	Graphic Input. Selects current graphic input device.	Off
H	Backspace. Same as left arrow on keyboard.	
I	Inverse. Print as negative image (cancels N)	Off
J	Linefeed. Same as down arrow on keyboard.	
K	Reverse Linefeed. Same as up arrow on keyboard.	
L	Linefeed Spacing. +2 digit number (00 to 99)	02
M	Carriage Return. Same as RETURN on keyboard.	
N	Normal. Print as positive image (cancels I)	On
O	Overlay. Overlay background (cancels R and T)	Off
P	Point Mode. Draw with single dot. RETURN or Graphic Input drops dot. (non-ctrl key to cancel)	Off
Q	Quit. Quits to Graphic Writer Menu.	
R	Replace. Replace background (cancels O and T)	On
S	Spacing between characters. +2 digit number. (00 to 99)	01
T	Transparent. Invert background. (cancels R and O)	Off
U	Forward space. Same as forward arrow on keyboard.	
V	Viewport. View file paramaters (again to close)	Closed
W	Window. Set window. I,J,K,M,Arrows to move the Corner markers. RETURN to accept placement.	Full Screen
X	Backslash Character.	
Y	Yank Screen From Disk (Graffile only)	
Z	Zero Cursor. Place Cursor in upper-left of screen.	
ESC	Escape Mode. Use I,J,K,M, and Arrows to move the cursor one dot at a time. (Any key except I,J,K,M, and Arrow keys to cancel)	Off

APPENDIX F

DEFAULTS
MINIMUMS
MAXIMUMS

GRAPHIC WRITER COMMAND CONTROL KEYS

CTRL	FUNCTION	DEFAULT
A	Ask For Help. Shows help screen.	
B	Background Color. +2 digit number (00 to 31)	00 (black)
C	Caps Lock. Selects lowercase or uppercase.	Uppercase
D	Default Window. Resets window to full screen.	
E	Erase Window. Erases to background color.	
F	Foreground Color. +2 digit number (00 to 31)	31 (white)
G	Graphic Input. Selects current graphic input device.	Off
H	Backspace. Same as left arrow on keyboard.	
I	Inverse. Print as negative image (cancels N)	Off
J	Linefeed. Same as down arrow on keyboard.	
K	Reverse Linefeed. Same as up arrow on keyboard.	
L	Linefeed Spacing. +2 digit number (00 to 99)	02
M	Carriage Return. Same as RETURN on keyboard.	
N	Normal. Print as positive image (cancels I)	On
O	Overlay. Overlay background (cancels R and T)	Off
P	Point Mode. Draw with single dot. RETURN or Graphic Input drops dot. (non-ctrl key to cancel)	Off
Q	Quit. Quits to Graphic Writer Menu.	
R	Replace. Replace background (cancels O and T)	On
S	Spacing between characters. +2 digit number. (00 to 99)	01
T	Transparent. Invert background. (cancels R and O)	Off
U	Forward space. Same as forward arrow on keyboard.	
V	Viewport. View file paramaters (again to close)	Closed
W	Window. Set window. I,J,K,M,Arrows to move the Corner markers. RETURN to accept placement.	Full Screen
X	Backslash Character.	
Y	Yank Screen From Disk (Graffile only)	
Z	Zero Cursor. Place Cursor in upper-left of screen.	
ESC	Escape Mode. Use I,J,K,M, and Arrows to move the cursor one dot at a time. (Any key except I,J,K,M, and Arrow keys to cancel)	Off

FONTRIX FONT EDITOR

SET PARAMETERS	LIMITS	COMMENTS
Set Name	1 to 15 characters	Alphanumerics and period only
Total Characters	1 to 94	
First Character	"!"=first, "~"=last	
Horizontal Cell Size	1 to 32	
Vertical Cell Size	1 to 32	
Proportional	yes or no	

EDIT SET COMMAND KEYS

KEY	FUNCTION
I,J,K,M, and Arrows	Move cursor to choose which character to edit.
V	View the entire set (again to cancel)
C	Copy one character cell into another.
O	Overlay one character cell over another.
RETURN	Select a character for editing.
Q	Quit and return to Font Editor Menu.

EDIT SINGLE CHARACTER COMMAND KEYS

KEY	FUNCTION
I,J,K,M, and Arrows	Move cursor within character cell.
Space Bar	Change a pixel. (If was Off turn On. If was On turn Off)
CTRL-E	Erase contents of character cell.
CTRL-P	Position within cell. (I,J,K,M,Arrows) (any other to cancel)
CTRL-X	Return to Edit Set without saving changes to character.
RETURN	Return to Edit Set and save changes to character.

INDEX

COMPATIBLE HARDWARE

FONTRIX Version 1.5

Requirements:

Apple II+, IIe, //c, or /// in emulation mode
Minimum 48K RAM
Apple DOS 3.3

Supported Peripherals:

Graphic Input Devices:

Graphic Tablet	Apple, Koala Touch Pad, Talos
Joystick	Apple, Hayes, Kraft, TG Products
Mouse	Apple, Product Associates
Paddles	Apple, Hayes, Kraft, TG Products

Printer Interface Cards:

Apple	Standard, Super Serial, Centronics
ALS	Dispatcher, Printermate
CCS	7728, 7710
Digitek	Super Printmaster
Epson	APL, Type 2
Franklin	Dual Parallel
Interactive Structures	PKASO
Microtek	Dumpling GX, Dumpling 64
Mountain	CPS Parallel
Okidata	Plug'n'Play
Orange Micro	Grappler, Grappler +
Practical Peripherals	Microbuffer II
Prometheus	Versacard, PRT-1, Graphitti
SSM	AIO2, APIO, APPIC, ASIO
Thirdware	FingerPrint
Tymac	PPC-100, Tackler
Videx	UniPrint, PSIO (parallel only)
Wesper	Wizard

Printers:

Anadex	9001-B, 9501-B, Color Scribe, Silent Scribe
Apple	DMP, Imagewriter, Scribe
Canon	PJ-1080A
Centronics	353, 358
C. Itoh	8510, 1550 (Prowriter/Prowriter2)
Data Produots (IDS)	460G, 560G, 8050, 8051, Prism80, Prism132
DataSouth	DS-180
Diablo	C-150 Ink jet
Epson	FX-80, FX-100, JX-80, MX-80, MX-100, LQ-1500, RX-80
Hewlett-Packard	Thinkjet (2225C), Laserjet
IBM	Color Printer, Graphics Printer
Inforunner	Riteman Plus, Riteman II, Riteman 16
Legend	1080, CP-VII
Mannesmann-Talley	MT-160L, MT-180L, Spirit80
NEC	8023, 8025, P2-3, P3-3
Okidata	82A, 83A, 84, 84 STEP 2, 92, 93, 2410
Panasonic	1092, 1093
Siemens	PT88, PT89
Star Micronics	Delta10, Delta15, Delta10PC, Delta15PC, Gemini10x, Gemini15x, Gemini10, Gemini15
Texas Instruments	TI-855, TI-865
Toshiba	1340, 1350, 1351