# PAINT 'N' PRINT

- Select from 32 different brushes
- Full use of Bit Map Color
- Magnify sections of screen
- Save to disk or cassette
- Cartridge Software requires only Joystick or Trackball controller

Navarone Industries, Inc.
19968 El Ray Lane

## TABLE OF CONTENTS

# 1.0 INTRODUCTION

Paint 'N' Print is the most powerful and versatile graphics program you can buy for your Home Computer. You can now create works of art by using your computer and get print-outs in full living color. The Paint'N' Print program comes ready to use in a rugged cartridge. No fancy interfaces or special hardware is required. The cartridge will operate on your TI-99/4A console without the need for expansion boxes, additional memory or expensive adaptors. You will need joysticks or a track-ball controller. You don't even need a printer, however to take full advantage of the power in this program we strongly recommend using this program with a printer. Only the AXIOM GP-700A color printer can be used for color printouts, and the AXIOM GP-100 graphics printer for black and white.

Many other popular printers may be adapted when using the Extended Graphics package sold separately on either diskette or cassette.

The objective of this manual is to explain the features of the Paint 'N' Print program and how to use them. We suggest you read through the entire manual before attempting to operate the program.

**NOTE:** *The title screen will show two selections for Paint 'N' Print.*

1. FOR TI BASIC
2. FOR PAINT 'N' PRINT GP-700
3. FOR GP-100

Both selections allow full use of all features. However, if you are to print your picture on the COLOR printer, use the selection for GP-700. If you are to print your picture on the Axiom graphics printer, then use selection for GP-100.

# 2.0 SETTING UP YOUR COMPUTER

Before using this program you will need the following equipment connected properly to your TI-99/4A computer.

A. TI-99/4A console (Paint 'N' Print will not operate with the V2.2 "white colored console").

B. Joysticks or trackball controller.

C. Color Monitor or Color TV. (a B/W TV will not display all the colors).

D. AXIOM GP-700A color graphics printer or AXIOM GP-100 graphics printer. (Paint 'N' Print will still allow pictures to be created and saved without a printer.)

## 2.1 Starting the Program

1. Insert the Paint 'N' Print cartridge into the slot on the console.
2. Turn on the computer and press any key to display the main menu.
3. Select the PAINT 'N' PRINT option by pressing the number which corresponds to type of printer you are using. (If no printout will be made then either selection may be used.)
4. The Title screen will display the words "PAINT 'N' PRINT." Press the "SPACE BAR" to continue.

## 2.2 Stopping the Program

1. Be sure to save your picture if you wish to keep it, then press QUIT to return to the master title screen.
2. Remove the cartridge.

# 3.0 PAINTING PICTURES

After starting the program the computer will display a white screen with a small "pen" on the screen. Position the pen by using the joystick or trackball controller. Press the "fire" button to "drop the pen." Holding the fire button down while moving the pen will draw using the currently selected brush with the current color.

**NOTE:** *The "ALPHA LOCK" key must be in the "UP" position in order to make the joystick or trackball work properly.*

## 3.1 Selecting your brush

Press the "B" key to display the brush menu. Move the menu left or right with the joystick or trackball until the desired brush is positioned over the marker at the top center of the screen, then press the "Fire" button to return to your picture with the selected brush.

## 3.2 Selecting Colors

Press the "C" key to display the color menu. Move the menu left or right with the joystick or trackball until the desired color is positioned over the marker at the top center of the screen, then press the "Fire" button to return to your picture with the selected color.

You can change the border or background color by pressing the "B" key when the desired color is positioned over the marker.

## 3.3 Erasing

You can erase parts of your picture by selecting the "clear" brush color. Use whatever brush style you desire and "paint" over the section of picture you wish to erase.

**You can erase the entire screen by pressing "Clear" (function - 4 key).**

# 4.0 PRINTING YOUR PICTURES

Using the Window ("W" key), drag out a window over the section of your picture your wish to print. With the window selected, press "P" key to print the picture.

Enter the list device for your printer. You must always use the .CR (ie; PIO.CR, AXIOM.CR).

**NOTE:** *The "P" (Print) option will work only while a window is selected on your picture.*

# 5.0 SAVING YOUR PICTURE

Your pictures can be saved on diskette or cassette for future use. You can also save your picture to Expanded Memory.

To use the Save option press the "S" key. If you are saving your picture to Expanded Memory enter "MEM."

NOTE: *Saving your picture to expanded memory, without the expanded memory installed, will be ignored.*

## 5.1 Saving to Diskette

After entering the Save option with the "S" key, you must enter a file name. You must enter the Disk.File name using the format as specified in your Disk memory system manual.

EXAMPLE: DSK1.PIC1  (saves to file "PIC1" on disk drive 1)
              DSK2.PIC1  (saves to file "PIC1" on disk drive 2)
              MEM        (saves to expanded memory)

If you enter an invalid disk name, the computer will return immediately to your picture screen without saving your picture.

If any other type of disk error occurs while attempting to Save your picture, a simple "**ERROR**" will be displayed along with a number identifying the error type. Consult the TI-Disk Memory manual for a description of these error codes.

## 5.2 Saving to Cassette.

Saving to Cassette requires that the cassette be properly connected to the computer just as if you were saving a TI-BASIC program.

After entering the save option by pressing the "S" key, the computer will ask you to enter the file name for the picture. At this time, the cassette motor will be turned on and you should rewind the cassette tape to the position where you desire to start, then press Stop on the recorder.

You must now enter the file name **CS1** and press enter.

At this time the computer will ask "**READY FOR RECORD?**"

Make sure the tape is rewound to the proper starting position, then ready the cassette player for RECORD.

Press any key to activate the SAVE operation.

Note: it will take about 3 minutes to save your picture to cassette.

After the picture is saved the computer will display your picture on the screen and the cassette motor will turn off.

---

NAVARONE

*Growing with the Home Computer*

## PAINT 'N PRINT

### ERRORS IN MANUAL

The *Paint 'N Print* manual incorrectly describes Cassette operations. The manual instructs you to *"Press any key"* at the time the computer displays the READY TO RECORD or READY TO LOAD message. You must press the Y key only. Pressing any other key will result in the operation being aborted.

This procedure must also be used to load the *EXTENDED GRAPHICS* from cassette.

### PICTURES

Several pictures have been provided with the *EXTENDED GRAPHICS* program. These pictures are recorded on both the Cassette and Diskette versions of Extended Graphics. The Cassette version contains two copies of the *Extended Graphics* program. One immediately behind the first. This is to insure you get a good copy. Following the *second* copy of the program is the first picture. You can load this picture by using the G key to *GET* the picture. When the computer asks to enter the file name you must type **CS1** and prepare your tape player for *PLAY*. At the message *READY TO LOAD* type Y to start loading the picture.

The diskette contains 3 pictures named *PIC1, PIC2 and PIC3*. to load these pictures follow the instructions in the manual.

### PRINTER PROBLEMS

If have trouble getting your pictures to printout properly you may not have your printer set up for *graphics*. Some printers require special switches to be set before graphics will be printed. Consult your printer manual and test the *graphics* capability by performing the test programs suggested in your printer manual. If your printer does not support graphics mode the *Paint 'N Print* program will not printout your picture.

If you have any questions or problems with this or other features please contact our office.

### INSTRUCTIONS FOR LOADING EXTENDED GRAPHICS
### FROM CASSETTE TAPE

1. Make sure your tape is rewound.

2. Load and select the Paint n' Print program from the main menu screen.

3. When you see the title screen (PAINT N' PRINT) Press "C" for cassette.

4. The screen will display the message "Ready for play?". At this time, you should prepare your cassette recorder with the Paint n' Print cassette fully rewound and have the "PLAY" buttons depressed.

5. Now press the "Y" key on the computer. The cassette player should start reading the tape.

6. The screen will display a black screen with a small white square in the lower right hand corner. The Extended graphics program will take approximately 3 minutes to load into the computer. When the program loads successfully the screen will display the white background with a pencil.

   If an error occurs in loading the tape program, the computer will sound a buzz and discontinue loading. You may verify that the cassette has loaded properly by selecting any of the extended graphic features described in the manual.

   If you have trouble loading the cassette program, consult your computer and cassette recorder instructions for more information on using the cassette program recorder.

# 6.0 GETTING YOUR PICTURE

The GET option allows you to retrieve your saved pictures. You can also load your picture from Expanded Memory if it was previously saved in expanded memory. Getting your picture from expanded memory is desirable when working on many variations of a picture in order to recall a prior version of your work quickly. To use the GET option press "G" key.

## 6.1 Getting from Diskette

After entering the GET option with the "G" key, you must enter a file name. You must enter the Disk.File name as specified in your Disk memory system manual.

> **EXAMPLE:** DSK1.PIC1
> DSK2.PIC1

If you enter an invalid disk name, the computer will return immediately to your picture screen without loading your picture.

If any other type of disk error occurs while attempting to load your picture, a simple "**ERROR**" will be displayed along with a number identifying the error type. Consult the TI-Disk Memory manual for a description of these error codes.

To return to your picture screen simply press the space bar once.

## 6.2 Getting from Cassette

Getting from Cassette requires that the cassette be properly connected to the computer just as if you were loading TI-BASIC program.

After entering the GET option by pressing the "G" key, the computer will ask you to enter the File Name for the picture. At this time, the cassette motor will be turned on and you should rewind the cassette tape to the position where you desire to start. Then press "Stop" on the recorder.

You must now enter the file name **CS1** and press enter.

At this time the computer will ask "**READY FOR PLAY?**"

Make sure the tape is rewound to the proper starting position, then ready the cassette player for PLAY.

Press any key to activate the GET operation.

**NOTE:** *It will take about 3 minutes to GET your picture from cassette.*

If an error occurs while loading from the cassette, the computer will display the messge "ERROR." You can press the space bar to return to the picture screen with as much of the picture it could load before the error.

After the picture is loaded the computer will display your picture on the screen and the cassette motor will turn off.

NOTE: *Only cassette drive 1 may be used with the Paint 'N' Print program. Entering the letters* "CS2" *will still use cassette drive 1.*

# 7.0 ADVANCED GRAPHICS FEATURES

Paint 'N' Print offers many advanced graphic features to allow you to draw straight lines, create perfect boxes and even gain control over each individual pixel (picture element).

## 7.1 Windows

Pressing the "W" key will change the drawing "pen" on the screen to a small cross (+). Position the cross to the desired location with the joystick then hold the "fire" button while moving the joystick. A "window" will stretch out of the cross and outline a segment of the picture. You can define the window anywhere on the screen and make it any size. To print the entire screen position the "cross" at the upper left corner of the screen, then hold down the fire button while moving the window down to the right until the window outlines the entire picture.

To return to the "Drawing" mode, simply press the "D" key. This will change the display and return the "PEN" to the screen.

## 7.2 Moving and Copying

The move and copy are one of the most powerful options available on any graphics program. The Paint 'N' Print cartridge makes it very easy to move or duplicate any section of your picture to any other location. This is extremely useful when developing special text or repetitive picture components.

The "Z" key is used to "toggle" between move and copy options. Initially, the program will default to a "MOVE" option when this feature is used. If you desire to use the COPY option, simply press the "Z" key once.

You can move or copy a section of the screen by placing the "Window" over the area of the picture you wish to move or copy. Release the "Fire" button then move the cross inside the window area. The cross will change to a "HAND" which can be positioned anywhere inside the window. With the "HAND" in the window, hold the "Fire" button down to "grab" the windowed area of the screen, then using the joystick or trackball, drag the second window to the location you desire then releaes the fire button, and press it again to activate the move/copy operation.

## 7.3 Text

Using text in your picture can be useful when preparing graphs and charts, or just to be able to name your picture can be done easily with the use of this option.

To enter the Text mode, simply press the "T" key. The current brush will be removed and you can start entering text in either upper case, or lower case. The entire keyboard will function like any word processor to enter text anywhere on the screen. When you desire to return to the "Drawing" mode, press the "FIRE" button.

## 7.4 Lines

The LINES option will let you draw one or more lines between points you choose in any brush and color you desire.

Before using this command, select the brush and color for your line.

Press the "L" key then position the "cross" at the starting point for your line. Press the "fire" button momentarily to set the starting location of the line, then move the cross to the ending location. A flashing line will connect the two points to show where the line will be drawn. Press the "fire" button again to actually draw the line with the current brush and color selected previously.

After drawing the line, press the "D" key to return to the drawing mode with your pen.

## 7.5 Rays

Rays option will produce a number of lines all starting from the same location.

Before using this command, select the brush and color for your line.

Press the "R" key then position the "Cross" to where you want the Rays to start. Press the "fire" button to set the starting location, then move the "cross" to the ending position of the ray and press "fire" once again to draw the Ray.

You can continue to move the cross to the next position and repeat the process for more Rays.

After drawing the Ray, press the "D" key to return to the drawing mode with your pen.

## 7.6 Boxes

The box option allows you to create perfect rectangles or squares of any size, with any color and brush style you desire.

Select the Box option by pressing the "O" key. As with the window option, you may position the "cross" to the starting location of the box, then press the "fire"button to "set" one corner. Move the box window with the joystick then press the fire button again to draw the box.

After drawing the box, press the "D" key to return to the drawing mode with your pen.

## 7.7 Magnify

This is perhaps the single most powerful feature of this or any graphics program. The Magnify option allows sections of your picture to be "blown up." The tiny dots that make up your picture are magnified to character size so you can control the fine detail of your picture.

Press the "SPACE BAR" to get into the magnify mode. The screen will display the tiny dots (pixels) as large squares. Each square represents a single "bit" of your picture. A good example of this is to use the smallest brush style and draw a line. Go into magnify and see how the line is made up of these "pixels."

You can alter any pixel by placing the cross on the square you wish to change and pressing the "fire" button. The pixel will change to the currently selected color.

You can change the current color by pressing the "C" key as described in section 3.2, or by positioning the cross on a pixel and pressing the "U" key. This will switch the current color to that of the pixel where the cross is located.

You can erase pixels by positioning the cross on any "clear" section of the screen, then pressing "U" to change to that current color. Once a clear color is selected simply hold the "fire" button down while moving over the pixels you wish to erase.

Press the "D" key to return to the drawing mode with your pen.

### BIT MAP BOUNDARY MARKER

The TI-99/4A computer allows only two colors to be displayed in each byte of the bit map screen area. This may be a bit technical for some of you, but by playing with the colors in the magnify mode you will quickly learn how to fool the computer by using the byte boundary to make use of more than two colors.

While in the Magnify Mode, you may have noticed how some of the cubes are outlined in a **bold** black line, while others are not. This bold line is the BYTE BOUNDARY marker. You will notice that only two colors can be displayed within any byte boundary. (ie; eight pixels per byte).

If your picture requires an intersection of more than two colors, you will have to use this boundary marker to locate that part of picture.

You will notice the Window and Text is only capable of being positioned within this boundary or byte oriented area.

## 7.8 Font Editor

The letters you see on the screen when the computer displays a message can be altered to a type style of your own design by using this feature. Keep in mind that all informational text will use the same type style as the TEXT you alter. This will not affect the way the program works, but if you are not careful, you can make the text illegible with very little effort.

Pressing the "ENTER" key will activate the Font Editor. A screen will display the text in Magnified images of each character in the computer's character set. You can jump to any character by simply typing the key you wish to see.

To return to the Drawing mode, simply press "FCTN-9" (BACK).

## 8.0 EXTENDED GRAPHICS PROGRAM

Although the Paint 'N' Print cartridge contains most everything you will ever need in a graphics program, many different types of printers require separate and unique program routines to operate. Since the cartridge is limited to only 8K bytes of program storage area, all of those special routines are too big and do not fit in the cartridge. The Extended Graphics Program (EGP) is available from Navarone and sold separately in either diskette or cassette versions. Most popular graphic printers are supported with the EGP software and some additional graphic features are provided to make the Paint 'N' Print the best graphics program available on the TI.

Extended Graphics programs require either a Disk Drive or Cassette, and the 32K memory expansion system.

## COMMAND KEYS

| KEY | COMMAND |
|-----|---------|
| "B" | Enter Brush selection menu |
|     | The B key will select Border color when in Color Menu |
| "C" | Enter Color Selection Menu |
| "D" | Return to Draw mode from the following: |
|     | Windows, Boxes, Lines, Rays, or Magnify modes. |
| "F" | Fill Window (only while window selected). |
| "G" | Enter Get picture mode |
| "O" | Enter Box mode |
| "P" | Print picture selected by window |
| "R" | Enter Rays mode |
| "S" | Enter Save picture mode |
| "T" | Enter Text Mode. (Press fire to return). |
| "U" | Change color to current pixel color. |
| "W" | Enter Window mode. |
| "Z" | Toggle "Move/Copy" while in window mode |
| SPACE | Enter Magnify mode. |
| ENTER | Enter Font Editor Mode (FCTN-9 to return.) |
| FCTN-4 | Clear picture screen. |
| FCTN-+ | QUIT and return to Master TI Title screen. |

## ADDENDUM

The area fill feature works with both the special texture patterns you can create, as well as the special rainbow colors. In order to accomplish this we had to make some sacrifices in the general performance of the *AREA FILL* feature. Certain designs may not fill completely, you can easily correct for this by moving to the un-filled area and repeat the operation by simply pressing the *Fire* key again. You may repeat these steps as often as is necessary to completely fill your design.
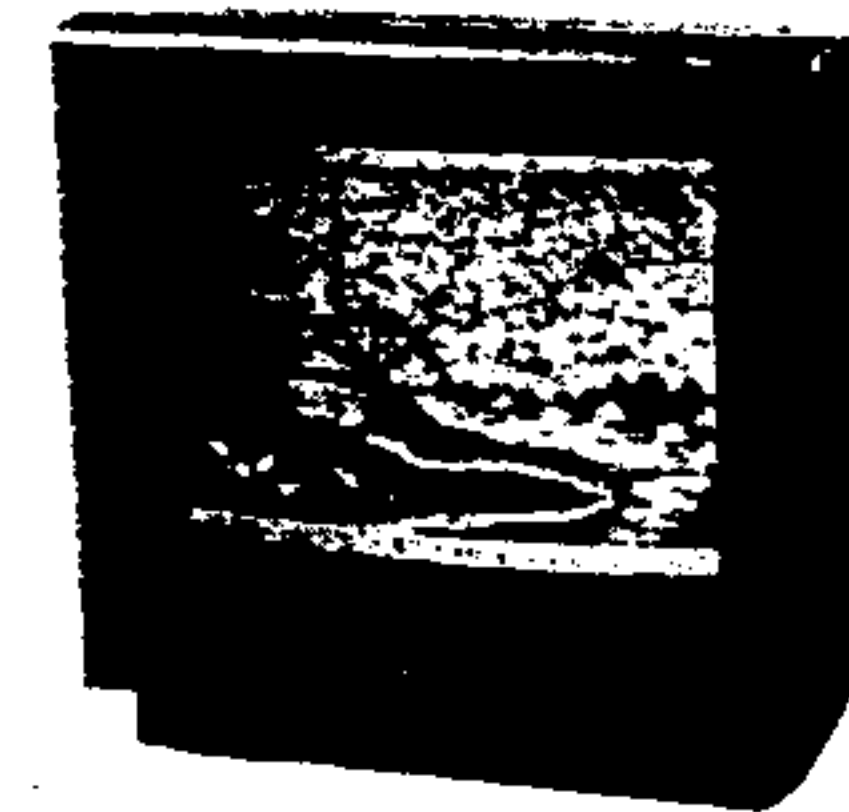
## PRINTERS

Some STAR printers will not operate properly with the selection for *GEMINI 10/15* from the *EXTENDED GRAPHICS or the PAINT 'N PRINT* cartridge. These "older" printers be ; made to perform correctly if you use the IBM selection. Be sure you enter the correct interface command *(ie: PIO.CR etc.)*.

# PAINT 'N' PRINT

## EXTENDED GRAPHICS PACKAGE

Paint colorful pictures with your computer and printout in living color.

NAVARONE

# COPYRIGHT

# DISCLAIMER OF WARRANTY

# TABLE OF CONTENTS

## INTRODUCTION

Extended Graphics is a supplimentary program that works with Navarone's Paint 'n' Print cartridge. It offers you several new painting tools plus a full compliment of printer support. Extended Graphics requires 32K expanded memory and either a disk drive or cassette.

Before you try to use your new Extended Graphics program we recommend that you first read your Paint 'n' Print manual and be familiar with its operation. The next step will be to read this manual during which time you will be instructed to make a backup of your master Extended Graphics diskette.

NOTE: *The title screen will show two selections for Paint 'n' Print:*

1. *FOR TI BASIC*
2. *FOR PAINT 'N' PRINT GP-700\**
3. *FOR GP-100\**

*Because Extended Graphics provides you with a new list of printers to choose from, it does not matter which menu selection (2 or 3) you choose to load Paint 'n' Print.*

\* These menu selections may be different depending on which printers are supported by your Paint 'n' Print cartridge.

## WHAT DO I DO FIRST?

1. Make a backup of your master Extended Graphics diskette. If you do not know how to make a copy please refer to the documentation provided with your disk management system. The Extended Graphics program is designed so that you will have to use your MASTER diskette to load Extended Graphics. If for some reason this diskette ever fails to load properly, simply copy the file named PAINT from your backup diskette onto your master diskette.

2. Follow steps 1 through 3 in section 2.1 of your Paint 'n' Print manual.
3. Insert your Extended Graphics working diskette in Drive 1 and type D to load Extended Graphics from disk or C to load it from cassette and follow the prompts. The pen should reappear on the screen when it has been loaded.

If you get an error repeat steps 2 and 3 above and try again.

NOTE: *Paint 'n' Print is the primary program while Extended Graphics is an overlay to Paint 'n' Print. You can use Paint 'n' Print alone or with the enhanced features of Extended Graphics. For this reason, this manual will not repeat instructions that were covered in the Paint 'n' Print manual, but will reference them by section number in your Paint 'n' Print manual.*

## USING YOUR NEW PAINTING TOOLS

Along with the original painting tools available with Paint 'n' Print, Extended Graphics offers you several new tools that can be used with new and old pictures created by Paint 'n' Print. These tools are:

| | |
|---|---|
| Area Fill | Texture |
| Circle | Color Swap |
| Invert/Mirror | Kaleidescope |

Along with these new tools, you can now print your pictures on any of the following printers:

| | |
|---|---|
| TI graphics | Smith-Corona graphics |
| Okidata w/graphics | Epson FX-80 w/graphics |
| IBM graphics | Axiom GP-100/550/700 |
| Star Gemini 10/15 | |

**NOTE:** *Most of the graphics printers being sold today will work with one of the above protocols. If your printer isn't listed, see if it will emulate one that is listed. If you can't find any information relating to this subject in your printer manual or from your dealer please contact Navarone Customer Support.*

What follows are detailed instructions on using these new tools and some helpful hints that will make your artistic endeavors much more rewarding.

## AREA FILL

Have you ever drawn an odd shape on the screen and wished that you could easily fill it with a particular color. Rather than taking out a brush and painting a swash or two of color and then filling up the holes, try using the *Area Fill* command.

Type A and the small cross (+) symbol should appear on your screen. Now, position the cross on the pixel where you want the fill routine to begin. When you press the fire button every pixel from the starting position to the area enclosed within an uninterrupted boundary will be filled with the active color. There are, however, some rules (and exceptions) that you should follow:

* An uninterrupted boundary is defined as a string of continuous pixels that have been turned on with any foreground color. Pixels that are 45° to one another, ie. connecting on the corners, are treated as continuous. The screen boundary also acts as a termination boundary for *Area Fill.*

* Best results will be achieved if the boundary color of the shape to be filled is the same as the active color. This especially holds true for *Texture Mode* (a new feature that will be introduced later.)

* You may get unpredictable results if you use *Area Fill* on a portion of the screen that has been erased (even with the transparent color.)

* *Area Fill* will only work with solid colors. It will not work with the five rainbow colors.

* When using *Area Fill* with any color in *Texture Mode* you may, at some point, experience the following symptoms:

    - A very slow filling of the designated area. Don't be concerned! *Texture Mode* requires more computations and therefore will fill more slowly.
    - No activity on the screen, yet the designated area has not been completely filled. Don't be concerned! Again, *Texture Mode* may be computing a complicated fill pattern that requires time. If, after a minute or so, you suspect that you are in a continuous loop you can abort Area Fill by holding down the fire button.
    - A crossing of an uniterrupted boundary. Well, it's time to be concerned! Because of the nature of *Texture Mode* it is possible for a boundary to be crossed. This may occur because of the area having been painted and then erased or the boundary color being different from the active color. Since this can potentially ruin hours or cherished work we highly recommend that you SAVE YOUR PICTURE BEFORE USING AREA FILL/TEXTURE. This same advice holds true anytime you are in question about a certain action or use of a tool.

The best advice we can give is to experiment with *Area Fill* and see how it responds in different circumstances. You may never experience any of the above conditions, but we wanted to let you know that these minor limitations do exist.

NOTE: *Area Fill uses expanded memory to store informa-tion. If you have saved your picture using the MEM option (see section 5.1 of your Paint 'n' Print manual), and then use the Area Fill command, it is likely that the picture saved in expanded memory will be destroyed.*

## CIRCLE

*Have you ever tried to draw a perfect circle 'Freehand'? Even with a computer it's not an easy chore, but the Circle command lets you draw them quickly and easily anywhere on the screen in any color!*

Type 0 and the small cross will again replace the pen on the screen. Move the cross to where you want the center of the circle to be. When you press the fire button and move the pointing device you will see an outline of a circle. When you have the exact size (and location) for your circle press the fire button again and the circle will be drawn with the active brush and color. If no circle appears, make sure that the active color is not transparent. If you decide that the center of the circle is not where you want it to be, rather than pressing the fire button a second time, type D and then 0 and try again.

In some cases, you may get a 'stair step' effect when drawing circles over painted areas. This is due to the bit map boundary (see section 7.7 of your Paint 'n' Print manual.) Again, you may want to manually edit these pixels if this occurs.

## INVERT/MIRROR

This is a tool that works in conjunction with the *Window Mode*. You can create mirror images and even flip objects upside down if you wish. This is especially useful for drawing symetrical images that can't easily be drawn with any of the other tools. It's also a handy tool to use after you draw an object and then decide that you want to create a similar object with a different profile.

First, you must type W to initiate *Window Mode*. By moving the pointing device you can enclose a single object or the entire screen within the window. *Invert/ Mirror* will work only on the enclosed area. After you have selected the area, type either I for *Invert* or M for *Mirror*. *Invert* will flip the image $180^{\circ}$ along the Y axis (upside down). *Mirror* will flip the image $180^{\circ}$ along the X axis.

You can use *Copy* and then *Mirror* to create identical images with different profiles or make minor modifica-tions to create a small crowd of people for example.

NOTE: *Invert/Mirror uses expanded memory to temporarily store its pictures. If you have saved your picture using the MEM option (see section 5.1 of your Paint 'n' Print manual), and then use Invert/ Mirror it is likely that the picture saved in expanded memory will be destroyed.*

## TEXTURE

*This is an excellent tool for blending colors, creating shadows, or adding depth to objects. Texture can be used with any of the solid colors as well as the five rainbow colors.*

To toggle *Texture Mode* On/Off simply press the semicolon (;) key. The screen will display *Texture Mode* status as being either on or off. As mentioned earlier, there are some limitations when using *Texture* with *Area Fill*.

*Texture* is a simple on/off pattern ie. every other pixel is turned on with the active color. You may find a need to paint an area with a different type of pattern. One method of doing this is to use Paint 'n' Print's Font Editor to edit a character pattern (see section 7.8 of your Paint 'n' Print manual.) After creating the pattern, enter *Text Mode* and type the edited character(s) where you want the pattern to appear.

## COLOR SWAP

At some point, you're bound to create an elaborate picture and then decide that you should have used a different color. *Color Swap* lets you easily make global color changes to your pictures. If you don't like the results, you can swap the colors back to the original.

To start the *Color Swap* process type **V** and the small cross will appear. Now select the color that you want to replace. You can do this by typing **C** and then choosing a color from the icon selection or you can grab a color by placing the small cross on a pixel that has the desired color and then type **U**. If you do not choose a color at this time, the current active color will be used. When you press the fire button, a menu selection of all the colors will appear. From this menu, select the number or letter of the new color. After a brief pause, all of the original colored pixels will be replaced with the new color. You can swap colors as often as you like!

**NOTE:** *If, for example, you change all the greens in your picture to blue and a portion of that picture is already blue, and you then change the blues back to green or any other color, ALL OF THE BLUE PIXELS WILL BE CHANGED. In this case, you would want to save your picture before experimenting with new colors.*

*Color Swap* only works with the entire picture. You cannot selectively swap colors in a portion of your picture.

## KALEIDESCOPE

This is a tool that lets you devide the screen into sections. When you draw in one section the image is mirrored in the other section(s). You can divide the screen into 2, 4, or 8 sections (the 2 section options allow you to divide the screen either horizontally or vertically.) The effect that you get is very similar to the kaleidescope tubes you played with as a kid. You can create perfectly symetrical images with a minimum of effort.

To invoke the *Kaleidescope Mode* type **K**. This will bring up a set of 5 icons at the top of the screen with one of the icons highlighted. As you move your pointing device, the highlighting square will move to the other icons. Below is a list of these selections:

- Leftmost position (which is blank) represents standard drawing mode - no kaleidescope effect.
- Horizontal bar divides the screen horizontally.
- Vertical bar divides the screen vertically.
- Intersecting horizontal and vertical bars divides the screen into quadrangles.
- Intersecting horizontal, vertical, and angled bars divides the screen into 8 sections.

When you have made your desired selection, press the fire button and the icons will disappear. As you draw you will see the effect of the *Kaleidescope* feature. To turn *Kaleidescope* off, type **K** again and select the leftmost (blank) position. This will return you to *Draw Mode*.

## PRINTING

Along with the new painting tools, Extended Graphics provides you with the necessary printer drivers to print your pictures on a number of different printers. Without Extended Graphics, printer selection takes place when you load Paint 'n' Print. When Extended Graphics is loaded, the initial printer selection is ignored and a new printer selection will be requested just before you print your picture.

The initial set up procedure for printing does not change (see section 4.0 of your Paint 'n' Print manual), however, when you type P to print the enclosed window, you will be presented with a list of printers. Type the number or letter that corresponds to the desired printer selection and then enter the list device for your printer. This printer menu will be presented only once during each Paint 'n' Print session.

## SUMMARY OF COMMANDS

| KEY | TOOL | PROCEDURE |
|---|---|---|
| A | AREA FILL | Type A, select area and press fire button. |
| 0 | CIRCLE | Type 0, select center of circle, press fire button, position blinking circle, press fire button a second time. |
| I/M | INVERT/MIRROR | Enclose object using *Window Mode*, then type I for *Invert* and/or M for *Mirror*. |
| ; | TEXTURE | Type ; to toggle ON and OFF. |
| V | COLOR SWAP | Type V, select a color by typing either C or U, press the fire button. |
| K | KALEIDESCOPE | Type K, select desired icon, press the fire button. |

## GLOSSARY OF TERMS

**active** - refers to the currently selected brush, color, or tool.

**cross** - is the cursor which indicates that a tool has been selected or that an operation is in progress.

**expanded memory** - is an external peripheral device that provides you with an additional 32K of RAM memory.

**icon** - is a small picture that represents a menu selection.

**fire button** - is the button located on your joystick or trackball.

**MEM option** - is the 'save' option that saves your picture in expanded memory rather than on diskette or cassette.

**overlay** - is a program that works in conjunction with another primary program.

**pen** - is the cursor which indicates that Paint 'n' Print is in *Draw Mode.*

**pixel** - is short for 'picture element'. This is the smallest unit on your screen in which you can control the color and other attributes. Pixels are the small squares you see when in *Magnify Mode.*

**pointing device** - refers to either joysticks or a trackball.

## ADDENDUM

## TEXTURE MODE

A new feature was added that allows the TEXTURE pattern to be edited with the *FONT EDITOR*. This feature greatly enhances the flexibility of the *EXTENDED GRAPHICS PACKAGE*, and provides you with a powerful shading tool.

The TEXTURE pattern is *defaulted* to a simple pattern of every other pixel being on. To change this pattern you may use the FONT EDITOR feature (*see Paint 'N Print manual*).

*A special character is used to provide the TEXTURE MASK.* This character is located at the very bottom right most position on your font character map. You can find this character by selecting the *EDIT FONT* feature (*ENTER KEY*), then pressing the <FCTN><W> key to take you to the bottom right position. Now you are just one character position to the left of the TEXTURE character. Change it by pressing the *fire* button until you create the design you wish to use for the texture pattern.

## AREA FILL

The area fill function has been improved to allow the use of this feature with the .texture and rainbow color modes.