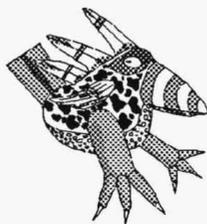


# TEMPRA™



# TEMPRA PRO



*Reference Manual*  
1992

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402 S. Kentucky Avenue  
Lakeland, Florida 33801  
813-682-1128

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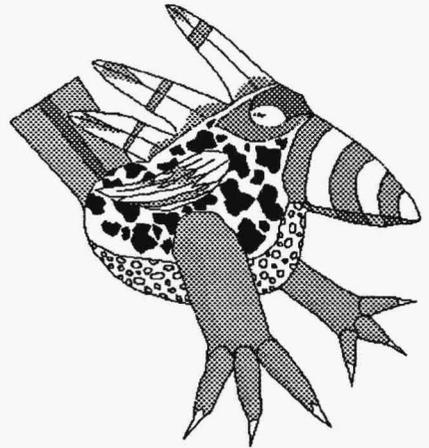
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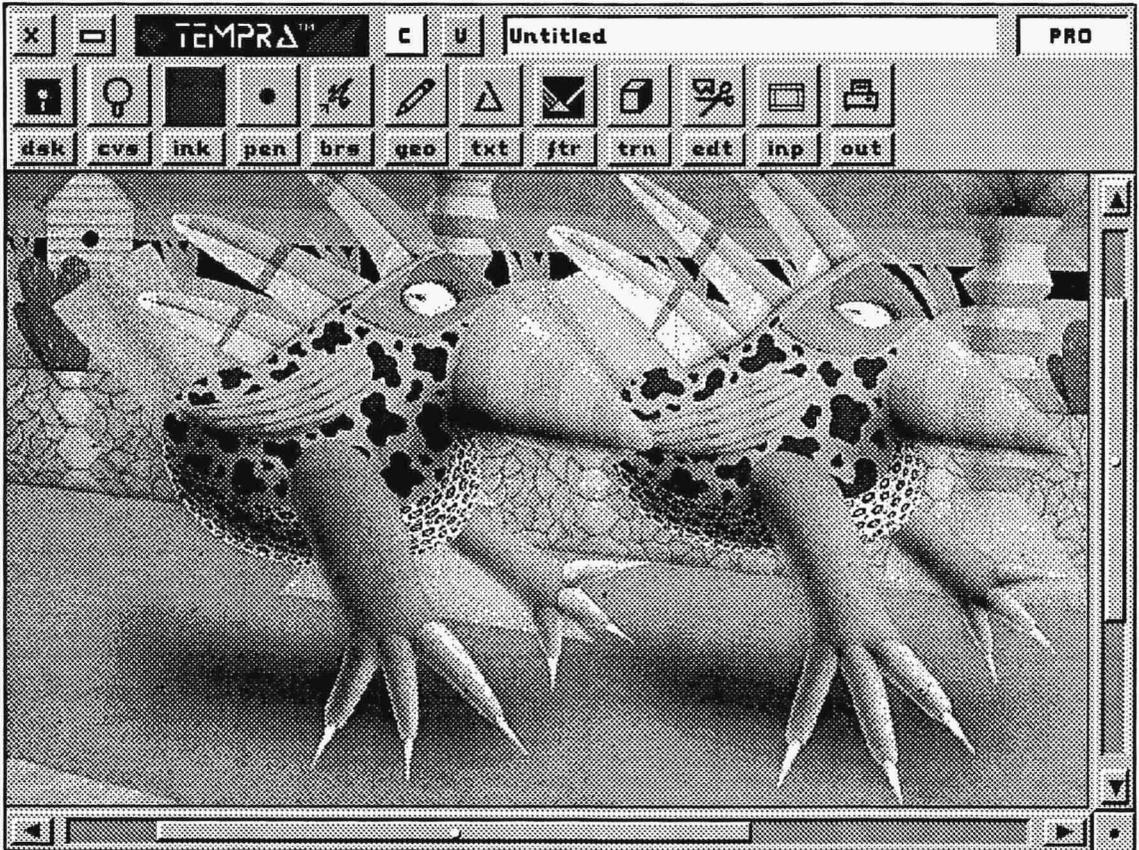
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# *Introduction*

---



# Introduction



## WELCOME TO TEMPR A PRO

Welcome to TEMPR A PRO, the ultimate personal imaging tool for presentation, publication, and commercial design. With TEMPR A PRO, your color display becomes a canvas for expressing your vision. This is a complete color and black-and-white solution for computers with display adapters ranging from basic VGAs to full-color video capture displays. As you use TEMPR A PRO, you will find new and unique ways to produce your visual message. We at Mathematica, Inc. know you will find TEMPR A PRO easy to use, powerful, and fun. Enjoy!

## CREATING THIS MANUAL

---

Mathematica, Inc. created this manual using TEMPRA PRO and common desktop publishing software. The text was typed using a popular word processor. All the graphics in this manual were created in TEMPRA PRO and then translated to the TIFF file format for desktop publishing. The pages were printed on a laser printer and became the camera-ready copy for our offset printer.

The menu screens were captured using Mcapture, a utility on the TEMPRA PRO disk. To save disk space, we used the Clipping Save feature of TEMPRA PRO to save only the parts of the captured image that were needed. When parts of a menu were highlighted or too dim to be seen in black and white, we used the color controls in TEMPRA PRO to make them uniform. The final graphics were saved using the TIFF file format and Compress to save even more space.

We spent many hours filling this reference manual with detailed information about TEMPRA PRO. Because we are committed to providing a quality software package that meets all of your image editing and paint needs, we may have added features to TEMPRA PRO that are not recorded in this documentation. We suggest you refer to your READ.ME file and supplements for related information.

## USING THIS MANUAL

---

The best way to learn TEMPRA PRO is to *use* it. Because of its graphic user interface, TEMPRA PRO's structure is fairly easy to follow. Use this manual as a guide to explore particular features of TEMPRA PRO.

The table of contents and index provide a quick reference checklist if you are looking for a specific function in TEMPRA PRO. The glossary gives additional information about common and specialized terms used in the computer graphics industry as well as in TEMPRA PRO. The appendices provide detailed instructions and lists of equipment and utilities particular to TEMPRA PRO.

Each section in this manual follows a basic pattern that describes, explains, and demonstrates how TEMPRA PRO works. Once you browse through the description of TEMPRA PRO's conventions (our menus and terminology), you will be able to understand the description of TEMPRA PRO's functions.

TEMPRA PRO has 12 groups of functions, which are shown across the Main Menu Bar. Each group has anywhere from one to 13 functions, which are listed in a drop-down menu. Selecting a function from the drop-down menu opens a function menu that contains controls for producing various effects with that function. Each section of the manual highlights a specific group and all of its functions, using the following format (the last five items are repeated for each function in the group):

- **Introduction** to the group of functions. A Main Menu Bar graphic highlights the functions and shows the drop-down menu.
- **Description** of the function. Each description includes a graphic of that function's icon and menu.
- **Example** (if applicable) of the function using various options and combinations.
- **Controls** available on the function menu. A graphic of each control is displayed next to a description of the control.
- **Hints and Combinations** for the function. Symbols of Buzz (our TEMPRA PRO toucan) throughout the manual represent some really neat ideas you might want to try.
- **Tutorial** (if applicable) for the function. A "hands-on" example that gets you started with that function.

## TEMPRA PRO TOUCANS

---

The painting on the cover of this manual and the front of the TEMPRA PRO box is called Toucan Road. It was painted by T.P. Speer and has become the symbol of TEMPRA PRO. The two birds are named Buzz and Sharp Boy. Buzz is on the left and is our favorite. Buzz has developed a personality since working at Mathematica, Inc.

Buzz is a very adaptable bird. He has been scanned, photographed, rendered, animated, palette-reduced, and shifted to gray scale. When Buzz isn't being cut up, he likes to have a little fun. Buzz used the colors in his feathers to teach us about color cycle. Buzz gives image editing advice to anyone who will listen. When you see Buzz in this manual, you know that what he says will help you enjoy TEMPRA PRO.

## **TECHNICAL SUPPORT**

---

Mathematica, Inc. provides technical support for registered TEMPRA PRO users from 9 a.m. to 5 p.m. (EST) on normal business days. Our technical support phone number is **813.682.1130**. We are not open on weekends or holidays. Have your version, serial number, and system information (your type of computer, amount of memory available, DOS version, and system configuration) ready when you call.

## **TURBO ANIMATOR FEATURE**

---

TEMPRA PRO has an add-on module that includes two powerful features: the Turbo Charger and the Animation Editor. The Turbo Charger provides 32-bit extended mode on 80386/SX and 80386/80486 computers. The Animation Editor provides animation editing and creation of .FLI and .FLC files. This module is optional and can be purchased through Mathematica, Inc. See Appendix F for details on using the Turbo Charger and Animation Editor features.

## **MEMORY NEEDED TO RUN TEMPRA PRO**

---

TEMPRA PRO requires a minimum amount of main memory (RAM) to run successfully. In some cases, there may be enough memory for the program to start, but not to run successfully, causing unexpected results. On an 8-bit display-depth board, such as SVGA or 8514/A, TEMPRA PRO needs at least 515,120 bytes of free memory. TEMPRA PRO for higher display-depth boards, such as the Artist RealVision

16E or Matrox Illuminator, may require slightly more free memory. If you use a memory manager, such as QEMM, this can be lowered to 496,064 bytes free. The memory must be between the 0 and 640 KB limit of DOS.

Check the memory available to TEMPRA PRO before you execute the program. Use CHKDSK.EXE or another program to find the amount of free memory. If you use TSR (Terminate and Stay Resident) programs, remove them before you run TEMPRA PRO, unless absolutely necessary. Check the AUTOEXEC.BAT and CONFIG.SYS files for the programs in your computer.

The hard disk space needed depends on the size of the image you edit. You need enough disk space to copy the TEMPRA PRO disks and to save images. If you use a canvas larger than the display area, you need more disk space. If your canvas is 2,000 by 3,000 pixels with 256 colors, you must be able to save the entire canvas. An image that size requires at least 6,000,000 bytes to be saved. Also, TEMPRA PRO creates a temporary file the same size as the file you are editing. So, the disk must have room for 12 million bytes to edit a 2,000 by 3,000 pixel image. If the number of colors is increased to 32,000 (16 bits per pixel), the required disk space doubles. An image at 32 bits per pixel needs 48 million bytes of free disk space for editing. If the image is saved with Compressed active, TEMPRA PRO still needs additional disk space for editing. If you don't have enough memory, a message appears.

You must save your edits while using a large canvas. If you do not use Save Image in the Files menu, any changes to your image may be lost.

## TEMPRA PRO INSTALLATION

---

You install TEMPRA PRO using the Install program that comes with the disks. To install TEMPRA PRO:

1. Check that you have at least 515,120 bytes of memory available to run TEMPRA PRO.
2. Insert the TEMPRA PRO Install,Program,Utilities (Disk 1) in the floppy disk drive.
3. Type **A:INSTALL** or **B:INSTALL** and Enter. The install menu pops up on the screen. Follow the installation procedures. You can either use the default settings or customize the directory and AUTOEXEC.BAT and CONFIG.SYS.
4. After installation is completed, the configuration menus appear on the screen for you to choose your display board and bit-depth. Once you've selected these configurations, the TEMPRA PRO menu pops up on the screen. You're ready to go!

**BUZZ  
SAYS**



*Be certain you have loaded your mouse driver (usually **MOUSE.COM**).  
TEMPRA PRO does not load the mouse driver for you.*

*TEMPRA PRO cannot be run directly off the floppy diskette. It must  
be installed on a hard disk.*

## TEMPRA PRO CONFIGURATION

You need to configure TEMPRA PRO the first time you run it. This process tells TEMPRA PRO what type of video display will be used. It also sets other elements needed to run TEMPRA PRO properly.

The TEMPRA PRO print program, PRINT PRO, needs to be installed the same way as TEMPRA PRO. To install PRINT PRO, type **PRINTPRO -R**. PRINT PRO may also give you a selection of printers. Select the printer attached to your computer.

To start the configuration process the first time you run TEMPRA PRO, simply type **TEMPRA**. When you want to change the configuration type **TEMPRA -R**. This starts the configuration even though TEMPRA PRO has already been installed. Your screen shows:

<p>Temptra Pro Configuration Menu (c) 1991 Mathematica, Inc.</p> <p>Current configuration: None</p>	<p>Driver</p> <p>8514/a or AI compatible</p> <p><b>Hercules Graphics Station</b></p> <p>High Color VGA (32K colors)</p> <p>Everex Viewpoint TC</p> <p>Genoa 7900</p> <p>Diamond Speedstar</p> <hr/> <p>No changes (Esc)</p>
---	---

Select one of the choices by moving the highlighted bar to the choice with the arrow keys or the mouse. Some choices open another screen and more choices. These choices involve the actual make and model of the display card, the color depth available, and the monitor. If your display doesn't need these choices, they won't appear on your screen.

The list of VGA boards will change as Mathematica, Inc. adds displays. Choose the display in your computer. If you choose a display with more than 8 bits of color (256 colors), this menu appears:

<b>Tempra Pro Configuration Menu</b> (c) 1991 Mathematica, Inc.	
Current configuration: <b>Hercules Graphics Station</b>	<b>Color mode</b> 8 bits (256 colors) 16 bits (32K colors) 24 bits (16M colors)
Color mode: 8 bits (256 colors)	<hr/> <hr/> No changes (Esc)

You may also have to choose the color monitor used with the display:

<b>Tempra Pro Configuration Menu</b> (c) 1991 Mathematica, Inc.	
Current configuration: <b>Hercules Graphics Station</b>	<b>Monitor</b> VGA monitor (640x480 only) Multisync (800x600) Multisync (1024x768 interlaced) Multisync (1024x768 non-int.) 8514 monitor (1024x768int.)
Color mode: 8 bits (256 colors)	<hr/> <hr/> No changes (Esc)
Monitor: VGA monitor (640x480 only)	

When you've made all your choices for your computer configuration, the starting menu returns. Select the Accept Configuration choice. TEMPRA PRO is configured. The final screen displays the following:

Saving Configuration...

Temptra Pro will now use this configuration as its default.  
To reconfigure Temptra Pro, restart the program with  
the command "TEMPRA -R"

Press any key to continue

## WINDOWS 3.0 USERS

---

Your TEMPRA PRO Program disk includes two files useful to Windows 3.0™ users: TEMPRA.PIF and TEMPRA.ICO. TEMPRA.PIF is the program information file. This file specifies the required and desired memory to run TEMPRA PRO. TEMPRA.ICO is the TEMPRA PRO icon. These files let you access TEMPRA PRO through Windows 3.0 as a DOS application in the 386 enhanced mode. You will need a 386 (SX/DX) or 486SX system to run TEMPRA PRO under Windows. TEMPRA PRO uses the Windows 3.0 HIMEM memory manager. To set up TEMPRA PRO in Windows 3.0, do the following:

1. Open your Windows program manager.
2. Select **File** from the command line.
3. Select **New** from the pop-up menu.
4. Select **Program Item** from the New Program Object pop-up menu.
5. In the Program Item Properties pop-up menu, type **TEMPRA PRO** as the description and **C:\TEMPRA\TEMPRA.EXE** as the command line.
6. Select the Change Icon button. Type **C:\TEMPRA\TEMPRA.ICO** as the filename. Select OK twice to save the icon.

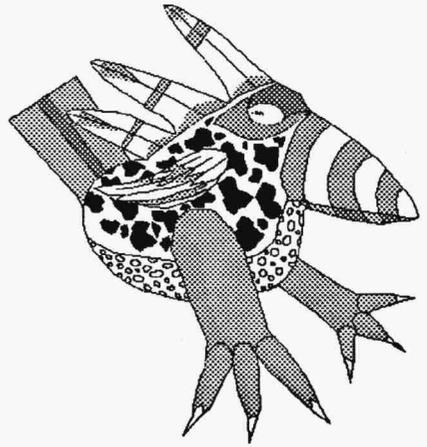
7. The TEMPRA PRO icon appears in the Windows screen group, and you can select the icon to start TEMPRA PRO from Windows.

**BUZZ  
SAYS**

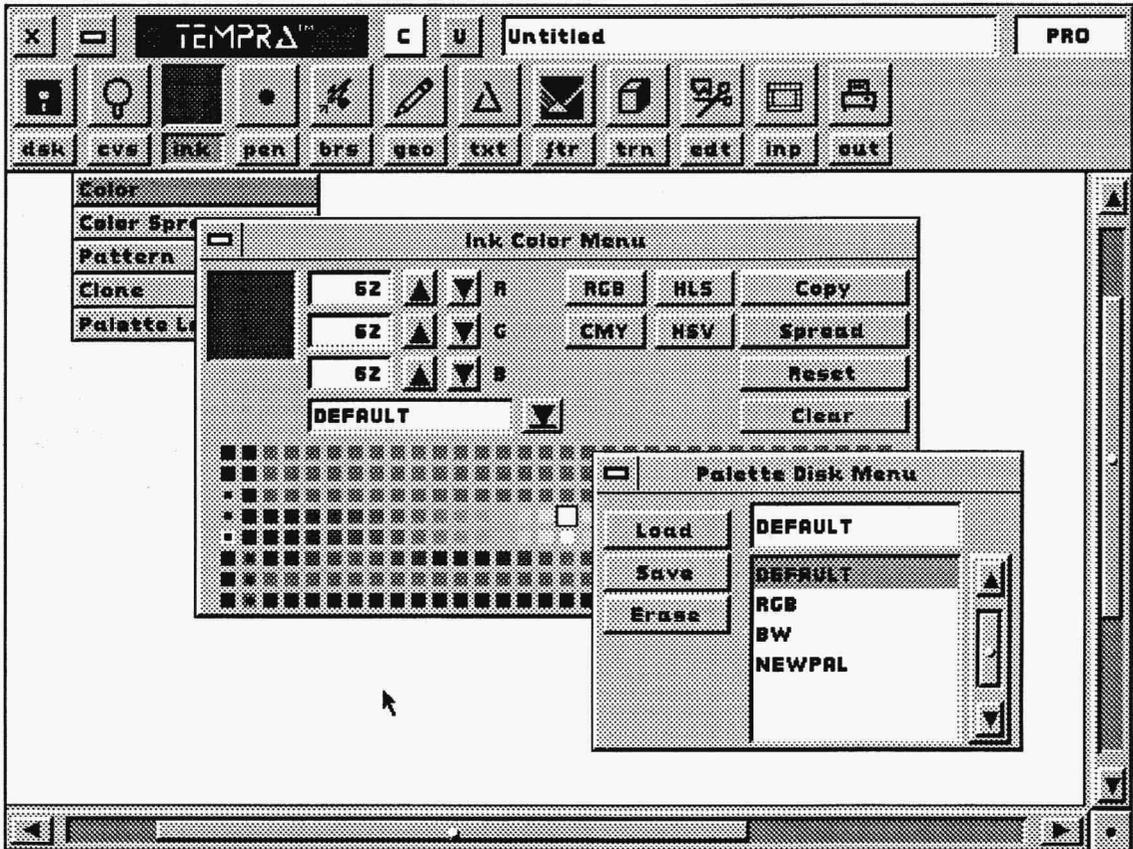
*TEMPRA.PIF tells Windows to retain video memory when switching from TEMPRA PRO to a Windows application. To open a Windows application from TEMPRA PRO without exiting TEMPRA PRO, press Ctrl + Esc or Alt + Esc. Switch back to TEMPRA PRO by selecting the TEMPRA PRO icon. The TEMPRA PRO image that was on the screen when you switched to your Windows application is still on the screen when you switch back to TEMPRA PRO.*

# *Conventions*

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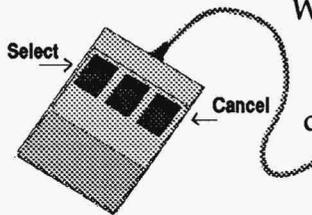
# Menu Conventions



## INTRODUCTION

TEMPRA PRO includes functions and terminology unique to this program. Although TEMPRA PRO's graphic user interface makes it one of the easiest paint programs to use, familiarizing yourself with the functions and menus will help you discover the various ways you can capture your creativity on canvas.

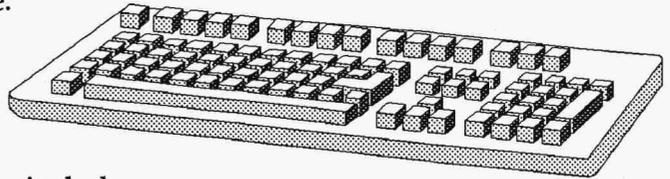
## USING THE MOUSE



TEMPRA PRO is designed to work with a two- or three-button mouse. With a two-button mouse, the left button is the Select button and the right button is the Cancel button. “Press Select” — or simply “select” — means to point the cursor at an item on the canvas and press the left mouse button. “Press Cancel” — or simply “cancel” — means to press the right mouse button. The center button on a three-button mouse has no effect in TEMPRA PRO.

## USING THE KEYBOARD

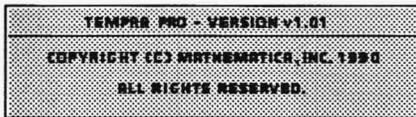
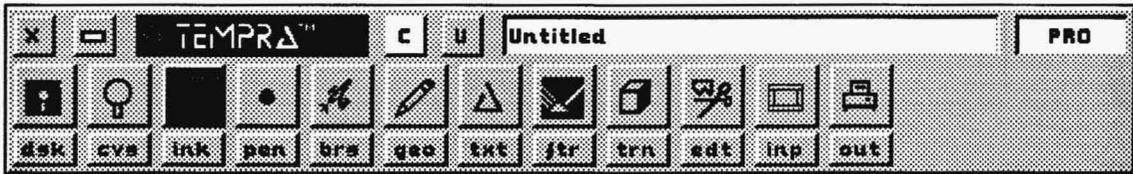
The keyboard may be used as a mouse substitute if you do not have a mouse available.



The substitutions include:

- |                        |  |
|------------------------|--|
| <b>Arrow Keys</b>      | Move the arrow-shaped cursor up, down, left, and right.  |
| <b>ALT (Alternate)</b> | Replaces the Select button.  |
| <b>ESC (Escape)</b>    | Replaces the Cancel button.  |
| <b>F2</b>              | Grabs color from the canvas while you edit. Allows you to change colors without going into a menu. Point the cursor over the color you want to grab and press F2.                        |
| <b>F4</b>              | Returns the first 16 default colors on Palette to the default menu colors. May change some colors in the current image.  |
| <b>F7</b>              | Toggles between the current Zoom setting and 0. Operates only on certain image capture boards that support hardware zoom, including the Matrox Illuminator 16 and Artist RealVision 16E. |
| <b>F9</b>              | Zooms out. Operates only on certain image capture boards that support hardware zoom, including the Matrox Illuminator 16 and Artist RealVision 16E.                                      |
| <b>F10</b>             | Zooms in. Operates only on certain image capture boards that support hardware zoom, including the Matrox Illuminator 16 and Artist RealVision 16E.                                       |

## MAIN MENU BAR



A copyright notice and the Main Menu Bar appear when you start TEMPRΔ PRO. The Main Menu Bar stretches across the top of the display and shows

various function icons; the Exit, Remove Menu, Clear, and Undo buttons; the TEMPRΔ logo; the path and filename of the image you are editing; and the PRO box. To paint, you select a function to open its menu, choose options for that function, press Cancel to remove the menus from the screen, and start painting. TEMPRΔ PRO usually “remembers” the last functions you select before you exit. When you restart the program, those functions are active.

### Exit Button



The Exit button ends your session with TEMPRΔ PRO. When you select the Exit button, a menu with a list of choices appears. If TEMPRΔ PRO is configured to run other programs or utilities, you will see them listed as choices. “Save and Exit” saves the current canvas and exits to DOS. “Continue Painting” returns you to TEMPRΔ PRO. “Exit to DOS” quits TEMPRΔ PRO and exits to DOS without saving the canvas. If you haven’t saved the canvas before attempting to exit, a message appears. To exit, press Cancel or select the Remove Menu button on the message box to open the Exit confirmation menu. Select “Yes” to exit if you don’t want to save the canvas. Select “No” to return to TEMPRΔ PRO and save the canvas.

### Remove Menu Button



The Remove Menu button clears the menu from the screen so you can begin painting on your canvas. Pressing Cancel on your mouse serves the same purpose as using the Remove Menu button. You’ll find a Remove Menu button on the Main Menu bar and on all the function menus and pull-down menus.



### Clear Button

The Clear button erases the image on your canvas and replaces it with the color inside the Clear button. A message box confirms clearing the screen. To change the color in the Clear button, select the Ink functions push-button and select Color from the drop-down menu. When the Ink Color menu appears, move the cursor to the palette and select a color as the new Clear color. Then select the Clear button in the Ink Color menu. The Clear buttons in the Ink Color menu and on the Main Menu Bar change to the selected color.



### Undo Button

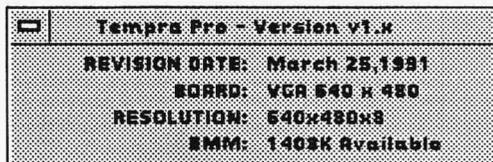
The Undo button reverses the last action taken on your canvas, usually since recalling the Main Menu Bar. Use the Undo feature when you have made a mistake while painting on the canvas. Undo is limited to the last items painted. It should not be a substitute for saving your work to disk. If there is not enough memory for Undo to function, the Main Menu Bar will not display the Undo button.

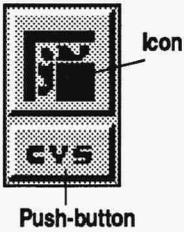
### Current File Box

This box displays the disk, current path, filename, and extension. This box is only a display; you cannot type in it. TEMPRA PRO always starts with a blank canvas called "Untitled" so you can paint a new image. After you save an untitled image with a specified name and then load it using that name, the Current File Box displays that image's filename.

### PRO Box

The PRO box displays the Version menu, which contains useful information about your version of TEMPRA PRO. This information includes the version date, the display board, the resolution of the display, and the amount of EMM memory available.





## Main Menu Bar Icon and Push-button

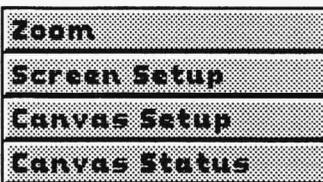
You can access the functions menus one of two ways: by selecting an icon or a push-button. Each icon on the Main Menu Bar represents a specific function available in TEMPR A PRO. Under each icon is a three-letter function push-button.

When you select an icon or push-button, the button depresses and changes color. Selecting the icon opens the menu that is currently active. Selecting the push-button opens a drop-down menu that lists the options for the function. Some functions (such as Geometry) list many options on the drop-down menu, while others (such as Brush) have only one.

The 12 groups of functions on the Main Menu Bar are:

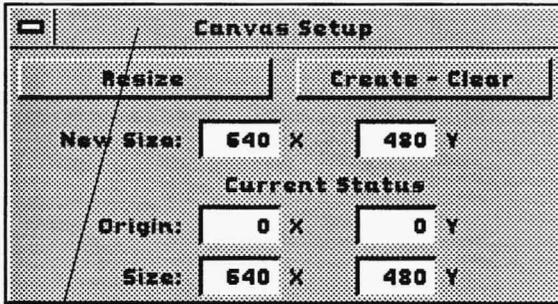
<b>DSK</b>	Disk Functions	<b>TXT</b>	Text Functions
<b>CVS</b>	Canvas Functions	<b>FTR</b>	Filter Functions
<b>INK</b>	Ink Functions	<b>TRN</b>	Transformation Functions
<b>PEN</b>	Pen Functions	<b>EDT</b>	Edit Functions
<b>BRS</b>	Brush Functions	<b>INP</b>	Input Functions
<b>GEO</b>	Geometry Functions	<b>OUT</b>	Output Functions

## Drop-down Menu



Selecting a three-letter push-button under an icon on the Main Menu Bar opens a drop-down menu. The drop-down menu has selector bars listing the various functions. Selecting a function on a selector bar opens a function menu with various controls.

## Function Menu



Title Bar

When you select a function on a drop-down menu, another menu pops up on the screen with controls that allow you to vary the way the function works. These controls include radio buttons and fine-tuning boxes. Some controls only work in conjunction with other controls and may be shaded until they can be activated.

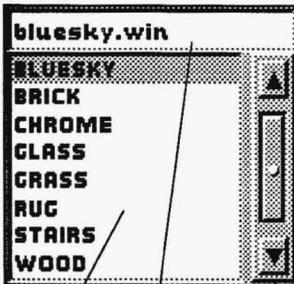
You can move the function menus (and pull-down menus) around on the screen by pressing Select on the title bar at the top of the menus. The Main Menu Bar and the function menu disappear. The function menu is replaced by a ghost representation box. As you move the mouse, the ghost menu moves on the screen. When the ghost menu is where you want it on the screen, press Select. The function menu is painted in the new position, but the Main Menu Bar does not return. With the exception of the Zoom menu, you must still press Cancel to paint on the canvas.

## Clock



The clock indicates TEMPR A PRO is working or calculating. The clock disappears when TEMPR A PRO has completed the action you requested.

## List Box and Filename Box



List Box

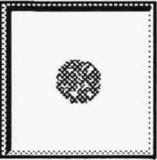
Filename Box

Some menus in TEMPR A PRO allow you to access many files and list these files alphabetically in a list box. On the right side of the list box is an elevator bar with elevator buttons (arrows) above and below it. The elevator buttons move you through the list of files one at a time. To move quickly through the list, select a location on the elevator bar. The list repositions to display the files in that location. If all the files can be listed on a single list box screen, the elevator bar completely fills the center elevator section. To select a file, place the cursor on the filename in the list box and press Select. The selected filename is displayed in the filename box at the top of the list box. You can also type the filename directly in the

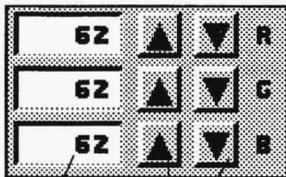
filename box. When you select the filename box, it changes color (usually blue). Type the filename and press Enter. The name in the filename box is highlighted in the list box. Some filename boxes (like in the Mask Editor and Pen Editor menus) are more like display boxes and cannot be used instead of the list box.

### Preview Box

Some menus include a preview box that displays the effects controls have on a function. By looking at the preview box, you can determine if one combination of controls is more effective than another.



### Fine-tuning Button and Number Box

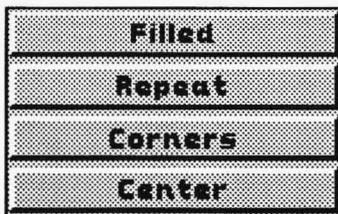


Number Box

Up-and-down  
Arrows

Some menus have fine-tuning buttons so you can make either minute or major adjustments to the function. Generally, these buttons are adjusted numerically using up-and-down arrows. Or you can manually change the numerical value by selecting the number box and typing the value you want. When you select the number box, it changes color (usually blue). Type in the value and press Enter. Value ranges vary for different functions.

### Radio Button



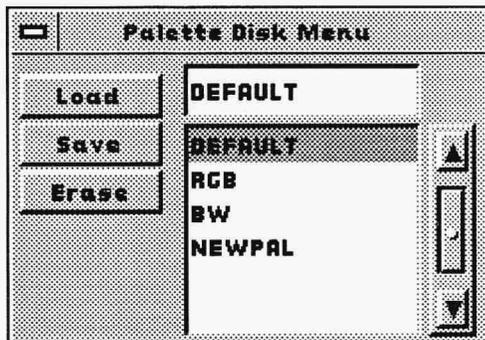
Most function menus have a selection of radio buttons that specify various options for that function. Selecting a radio button activates it (the button depresses and changes color—usually red). Some radio buttons don't work when others are active. For example, in the Rectangle menu, either "Corners" or "Center" can be active, but not both at the same time. Other radio buttons must be used in combination with others. For example, in the Regular Polygon menu, "Point 1 Fixed" must be active before "Repeat" can be turned on.



### Pull-down Menu Button

Some function menus include a pull-down menu, which you access by selecting an underlined down arrow. If no pull-down menu is available, there is no pull-down menu button on the function menu.

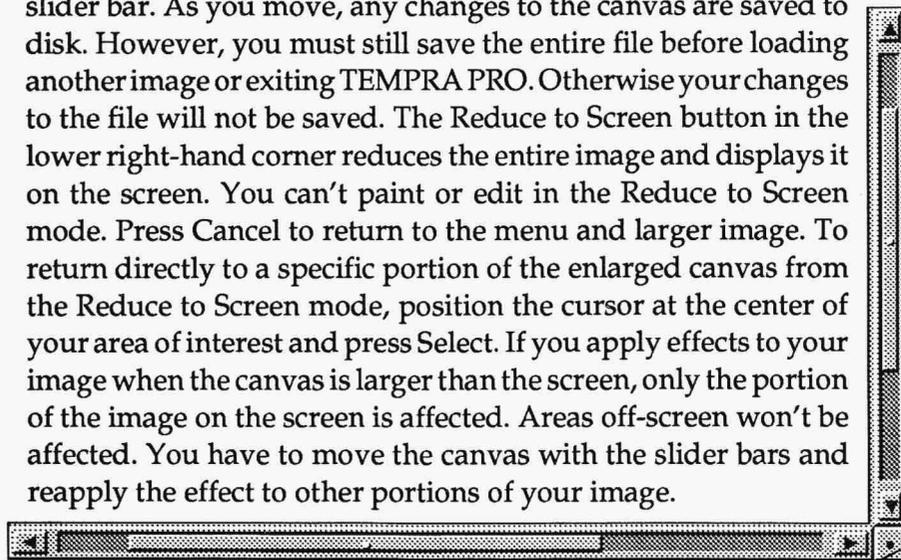
### Pull-down Menu



The pull-down menu has a list box and, usually, options to load, save, and erase. Certain functions in TEMPRA PRO allow you to save specific items, such as pens, masks, and palettes. Choose a file by selecting the filename in the list box. The selected filename is highlighted in the list box and displayed in the filename box above the list box. Select the radio button to perform the desired action (save, load, erase).

### Canvas Slider

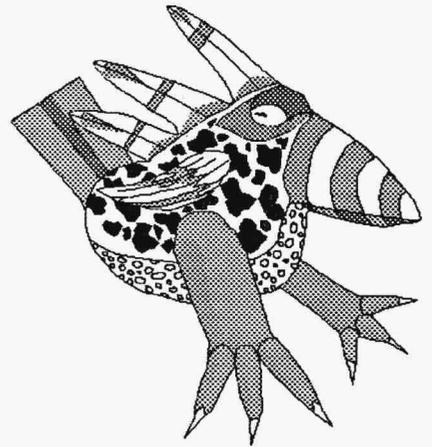
When your canvas is larger than the area that can be displayed on your screen, a set of canvas sliders appear around the edge of your display. You can move around on the image by using the slider bars. The arrows at the end of the slider bars move you one pixel at a time. You can move around the canvas more quickly by pressing Select on the slider bar. As you move, any changes to the canvas are saved to disk. However, you must still save the entire file before loading another image or exiting TEMPRA PRO. Otherwise your changes to the file will not be saved. The Reduce to Screen button in the lower right-hand corner reduces the entire image and displays it on the screen. You can't paint or edit in the Reduce to Screen mode. Press Cancel to return to the menu and larger image. To return directly to a specific portion of the enlarged canvas from the Reduce to Screen mode, position the cursor at the center of your area of interest and press Select. If you apply effects to your image when the canvas is larger than the screen, only the portion of the image on the screen is affected. Areas off-screen won't be affected. You have to move the canvas with the slider bars and reapply the effect to other portions of your image.



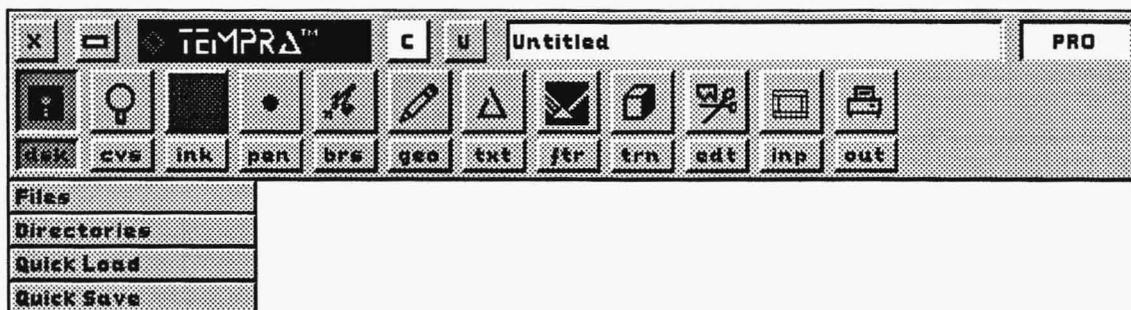
Reduce to Screen Button

# Functions

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# Disk Functions

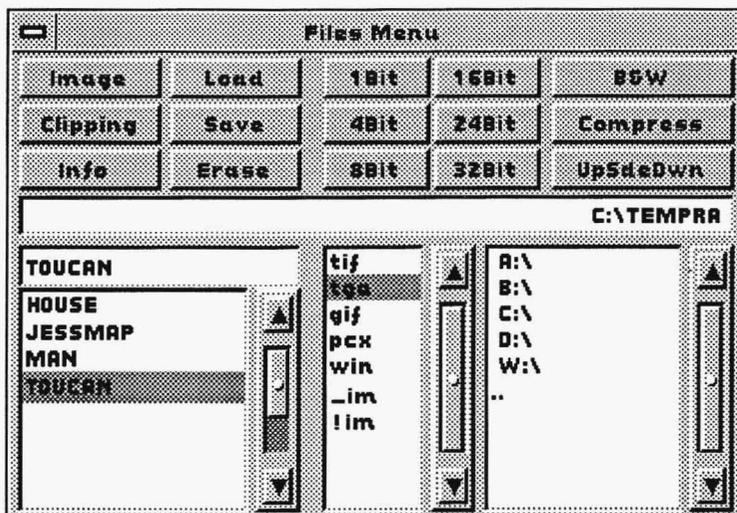
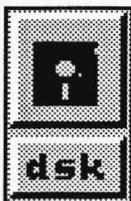


## INTRODUCTION

The Disk functions menu provides access to your computer's disk. With the Files menu, you can save, load, and erase images and clippings. With the Directories menu, you can view all the DOS directories used and navigate through the directories.

TEMPRA PRO uses standard MS-DOS or PC-DOS directory paths. You need to create these directories in DOS, since TEMPRA PRO does not provide a function to create a directory.

The Quick Load and Quick Save buttons on the Disk drop-down menu provide complementary functions. The Quick Save button saves the current canvas, while the Quick Load button restores an image that has been Quick Saved. The Quick Load button is not active in TEMPRA PRO until you use Quick Save. The Quick Load and Quick Save combination provides a method of simulating the Undo function if there is too little memory for Undo. It provides the user with a means to quickly save interim steps as an image is edited. The Quick Load and Quick Save combination is not a substitute for saving an image with the Files menu. You must use the regular Save function to permanently save image files.



The Files menu allows you to load, save, and erase images and clippings. You also use this menu to select the number of bits per pixel when saving files. Bits per pixel range from 1 bit to 32 bits. You can save images and clippings with either a color or black-and-white palette. Other options include compressing and inverting images.

The Files menu differentiates between a file that fills the entire canvas and a file that fills only a portion of the canvas. An image fills the entire canvas and is a stand-alone file. A clipping is a part of an image and can be used as either a stand-alone file or with another clipping or image. The Files Controls section on the next page further distinguishes between the uses for each type of file.



## FILES CONTROLS

### Image

#### Image

An Image file occupies the entire canvas. The canvas is the entire area that you can edit and may be larger than, smaller than, or the same as your current screen display size (resolution). When you load an Image file, the image fills the canvas because TEMPRA PRO automatically creates a canvas size that is the same size as the image. If you load an Image file that is 320 by 200, the canvas automatically becomes 320 by 200 pixels. That canvas size is the only area you can edit. You cannot edit outside that area even if your display size is larger than 320 by 200. If you load an image larger than your display size or resolution, TEMPRA PRO automatically changes the canvas size to that of the large image and displays canvas slider bars around sides of the image.

Images can be saved, loaded, and erased from the disk. An image that is loaded into TEMPRA PRO replaces the image that was previously on the canvas. TEMPRA PRO uses the image size to create the canvas size. The palette that is with the image becomes the palette used by TEMPRA PRO. The palette is the set of 256 colors available on displays limited to 256 colors. The palette is not limited on displays using 16 bits of color per pixel (32,000 colors) or 24 bits (16,000,000 colors).

An image saved to disk is written to the device and path indicated in the Path display box. The path to the directories may be changed in the Disk menu or in the Set Disk Directories menu. You can type in a name up to 8 characters. TEMPRA PRO automatically adds a period and the filename extension.

### Clipping

#### Clipping

A Clipping file is a portion of the canvas and is manipulated with the same Edit icons used in Clip Rectangle and Clip Polygon (see the Edit Functions chapter for more on the icons). Clippings are usually made by cutting from a larger image. They can have irregular shapes and can be loaded back into the original image or onto another image. You can save, load, and erase clippings in any file type TEMPRA PRO supports. You can also load any previously saved image file as a clipping.



You save clippings as either a polygon or a rectangle. The clipping shape is determined in the Edit menu (Clip Rectangle or Clip Polygon). You can usually quickly check which shape is active in the Edit menu by looking at the Edit function icon on the Main Menu. If you used the Rectangle Clip last in the Edit menu, the clipping is saved as a rectangle. If you used the Polygon Clip last in the Edit menu, the clipping is saved as a polygon.

You can load an Image file as a Clipping and a Clipping file as an Image. TEMPRA PRO treats the same file differently depending on which button you select in the Files menu when you load the file on the canvas. When you load a Clipping file, icons appear around the border of the clipping. You use these icons to position the clipping before you paint it to the canvas. You can also change the size and orientation of the clipping. The clipping icons are the same ones used in the Edit functions for Clip Rectangle and Clip Polygon.

**Info****Info**

The File Information Box brings up a new menu that lets you preview thumbnails of your images and includes such information as the file size, date and time created, and bit-depth.

**Load****Load**

The Load button loads the file displayed in the filename box (above the list box) onto the canvas. If Image is active, the file is loaded as an image. The screen clears and that file's palette becomes the current palette for TEMPRA PRO. If Clipping is active, the file is loaded as a clipping on top of whatever is already on the canvas.

**Save****Save**

Save stores an image or a clipping on disk. Before you save the file, you need to determine: 1) the type of file (Image or Clipping), 2) the bits per pixel, 3) if it is black and white, 4) if it is compressed, 5) if you want it saved upside down, 6) the file extension, and 7) on which directory and drive you want it stored.



## Erase

### Erase

The Erase button deletes the file named in the filename box. Before TEMPRA PRO erases the file, it provides a dialogue box asking if you want to erase that image. If you move the cursor to the Yes button and press Select, the file is erased. If you select No, the file is not erased. If you press Cancel, the file is not erased. The only way to erase a file is to select the Yes button on the dialogue box.

### Bit-depth Buttons

1Bit	16Bit
4Bit	24Bit
8Bit	32Bit

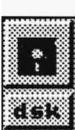
Each file TEMPRA PRO uses has a bit-depth. The number of bits per pixel determines the maximum number of colors in the file when it is saved. The term bit-depth and color-depth are used interchangeably. The range is from 1 bit per pixel to 32 bits per pixel. The following lists the maximum number of colors available with each

file type:

1 Bit = 1 color (black and white)	16 Bits = 32,000 colors
4 Bits = 16 colors	24 Bits = 16,000,000 colors
8 Bits = 256 colors	32 Bits = 16,000,000 colors

Some file type and color-depth combinations are not possible. Either TEMPRA PRO does not support a file format or that file has no defined format at that color depth. For instance, TIFF files can be 8 or 24 bits, but not 16 bits. There is no definition for a 16-bit TIFF file. Files with 32 bits have the same number of colors as a 24-bit file; the extra depth is reserved for other information. TEMPRA PRO saves a 32-bit file so it can be used in other programs. Some bit-depth buttons are reserved for possible future TEMPRA PRO features and may not be available.

You set the bit-depth before you save a file. If you have a VGA or other 8-bit display board, save your files with a color-depth of 8 bits. If you save with a color-depth greater than 8, the file is dithered the next time you load it into TEMPRA PRO. TEMPRA PRO can save images with greater bit-depth than the display so you can use the files in other programs that are limited in the file types they can use. If you save an image from a 256-color display to a file with 32,000 colors, you do not increase the colors in the image. The image still has 256 colors, which are part of a color space that can possibly hold 32,000 colors.



TEMPRA PRO checks the bit-depth buttons on the menu when a file is loaded. If the file bit-depth matches the bit-depth of the color display board (such as loading an 8-bit image onto an 8-bit display) TEMPRA PRO simply loads the image. If the image file contains more color-depth than can be displayed on the display board, TEMPRA PRO dithers the image with the current palette so it appears as close as possible to the original image. You can load an image with 16 bits of color-depth onto an 8-bit display board; however, the image is dithered when it is displayed in TEMPRA PRO. For best results when loading an image with a bit-depth higher than 8-bit on an 8-bit display board load the RGB (Red, Green, Blue) palette from the Palette Disk menu (accessed from the Ink Color menu) *before* loading the image.

### B&W (Black and White)



Black and White forces images and clippings saved to have an 8-bit (256 shades of gray) black-and-white palette. Be sure to set the bit-depth at 8 whenever you save an image or clipping as black and white.

### Compress



Compress squeezes files when they are saved so they occupy less disk space. The type of compression routine used depends on the type of file being saved. Compress can only be used when saving files. When you load a file, TEMPRA PRO determines if a compression formula was used and decompresses the file. Some files are always compressed, and Compress is set by default when the file is saved.

### UpSdeDwn (Upside Down)



Some programs cannot load a .TGA image unless it is saved upside down. The UpSdeDwn button gives that option. This button is available only when .TGA and .WIN file formats are selected.

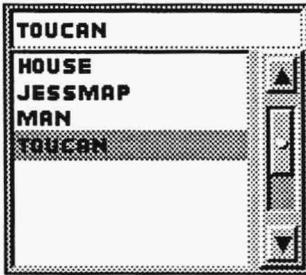
### Path Display Box



The Path display box shows the DOS path used for loading and saving images or clippings. Use the Directory Path List control box under the Path display on the right side of the Disk menu to change paths.



## File List Box



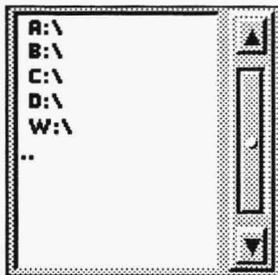
The File list box shows an alphabetical list of all the files in the current directory. If you select a filename from the File list box, the name appears in the filename box to be saved, loaded, or erased. Filenames must be 8 characters or less. To type a filename in the filename box, place the cursor on the box and press Select. Type in the filename and press Enter. Don't type a file extension. TEMPRA PRO adds the extension automatically, depending on the file format selected in the File Extension list box. If you add an extension that is incorrect or unrecognizable, TEMPRA PRO won't be able to find the file.

## File Extension List Box



The File Extension list box contains the list of file extensions supported by TEMPRA PRO. Each extension represents a graphic image file format. As you change file extensions, the file names in the File list box change. The File list box displays the files in the current directory which have the selected extension in the File Extension list box.

## Directory Path List Box



The Directory Path list box controls the disk drive and directory path to load, save, and erase Image or Clipping files. Use the Directory Path list box to change disk drives and the paths on those drives. Changes made in the Disk menu to your image or clipping path are also shown in the Set Disk Directories menu. The disk and path settings made in the Set Disk Directories menu are also shown in the Directory Path display box. The length of your path is limited to 64 characters.

To choose a disk drive, such as A: or C:, move the cursor to the disk letter and press Select. Choose a directory name the same way. Move to a parent directory by pointing to ".." and pressing Select. If you select a disk drive that is not ready, such as the A: floppy drive with no diskette in it, TEMPRA PRO displays an error message. Select the Remove Menu button on the error message, place a diskette in the floppy drive, and select the floppy drive in the Directory Path list box.



## FILES HINTS AND COMBINATIONS

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The Disk menu provides rapid image and clipping loading and saving. We encourage you to save your work often. A quick way to save is to select the Disk icon from the Main Menu, save the current image, and return to editing. Then, if you make a mistake, you have a recent copy of your image on disk and avoid losing any work. Saving often also encourages you to try new effects in your editing and painting. If you do not like the results, you can feel confident knowing a copy of your work is on your disk.

Since a file can be treated as both an Image and a Clipping, if you make a Clipping from an existing Image file, you will want to give the clipping a different name. Otherwise, the new clipping file will overwrite the original image file on disk when you save the clipping. Of course, it's always best to have a backup copy of your images on disk in case something happens to the original.

If you press Cancel while outlining a rectangular clipping area for saving, the clipping won't be saved to disk. Instead, the Main Menu Bar and Files menu return to the screen. Your clipping filename remains in the filename box. Simply select Save to return to the screen and re-outline the clipping.

**BUZZ  
SAYS**



*If your images take a lot of disk space, use Compress to make your image files smaller. Compress works best on images with large areas of the same color. Photographs won't compress as well as paintings. To see the advantage of Compress on your images, save the same image with Compress off and then change the name of the file and save with Compress on. Do a "DIR" in DOS to see how the file sizes differ.*



## FILES TUTORIAL

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To load an image:

1. Select the DSK function push-button on the Main Menu Bar to open the Disk drop-down menu. Select Files from the drop-down menu. The Files menu appears.
2. Move the cursor to the File Extension list box and select a file format you know is on your disk. (TEMPRA PRO sample files are .TGA.)
3. Select a filename from the File list box. The name appears in the filename box above the list box.
4. Select the Image button. Then select the Load button. The image will appear on the screen and fill the canvas.

To load a clipping:

1. Select the DSK functions push-button on the Main Menu Bar to open the Disk drop-down menu. Select Files from the drop-down menu to open the Files menu.
2. Move the cursor to the File Extension list box and select a file format you know is on your disk.
3. Select a filename from the File list box.
4. Select the Clipping button. Then select the Load button. The clipping will appear on the screen surrounded by the Edit icons (the same icons used in Clip Rectangle and Clip Polygon). Move the cursor to one of the Move icons. The cursor will turn into the Move icon when it is close to the icon. Press Select, hold down the Select button on the mouse, and move the mouse to position the clipping on the screen. When the clipping is where you want it, release the Select button, move the cursor to the Paste icon, and press Select to paste down the clipping.



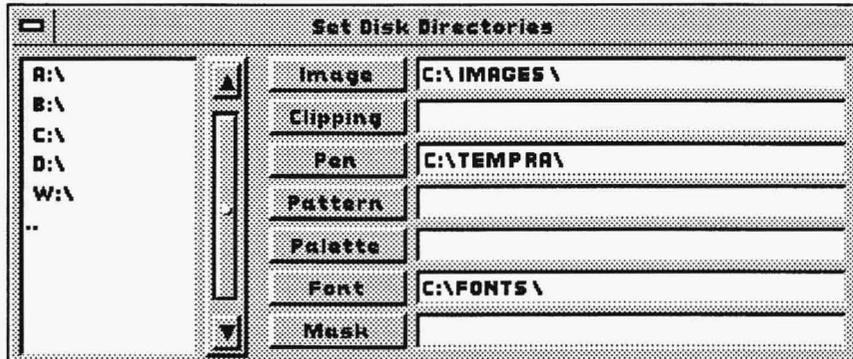
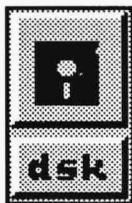
To save an image:

1. Load an image on your canvas.
2. Select the DSK functions push-button on the Main Menu Bar to open the Disk drop-down menu. Select Files from the drop-down menu. The Files menu appears.
3. Press Select in the filename box above the list box. The box turns blue. Type in a filename with 8 characters or less and press the Enter key.
4. Select the Image button.
5. Select Save to save the image on your canvas onto your disk. The name you typed in the filename box appears in the list of files in the File list box.

To save a clipping:

1. Load an image on your canvas.
2. Select the EDT functions push-button on the Main Menu Bar to open the Edit drop-down menu. Select Clip Rectangle from the drop-down menu.
3. Select the DSK function on the Main Menu to open the Disk drop-down menu. Select Files. The Files menu appears.
4. Press Select in the filename box. The box turns blue. Type in a file name with 8 characters or less and press the Enter key.
5. Select the Clipping button.
6. Select Save. The menu disappears and the cursor is on the canvas.
7. Move the cursor to the upper left corner of the area you wish to save and press Select. Stretch the ghost rectangle to outline the area you want as your clipping. Press Select to save the clipping to disk.

## SET DISK DIRECTORIES

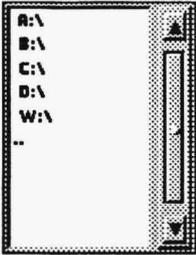


The Set Disk Directories menu allows you to see and change the disk drives and directories TEMPRA PRO uses to load and save files. You access this menu by selecting Directories from the Disk functions drop-down menu. Each type of file TEMPRA PRO uses can have its own disk and directory path. As you change disk and directory paths, the display boxes show where the files are saved and loaded. If a disk and directories path is too long to fit in the display box, the first part of the path is replaced by a ".." symbol.



## SET DISK DIRECTORIES CONTROLS

### Directory Path List Box



The Directory Path list box contains the names of the disk drives on your computer and the directories available to you. You select different disk drives and directories by moving the cursor to them and pressing Select. The disk drive names consist of a letter, a colon, and a backslash, such as "A:\\" or "C:\\". Selecting a disk drive places you in the drive's root directory. The directory names of the current drive are displayed under the list of disk drives. The ".." symbol represents the "parent" or "back up one" directory. Select the ".." symbol to move to the parent directory of the current directory. If your computer has so many drive and/or directories that they all don't fit in the list box at the same time, use the elevator bar to move through the list.

### File Type Buttons



TEMPRA PRO uses seven types of files. They are listed as seven buttons in the center of the Set Disk Directories menu. Each file type can have its own disk drive and path. When you select a file type button, whatever selection you make in the Directory Path list box reflects information for that file type. The seven types of files are:

- Image
- Clipping
- Pen
- Pattern
- Palette
- Font
- Mask

### Path Display Boxes



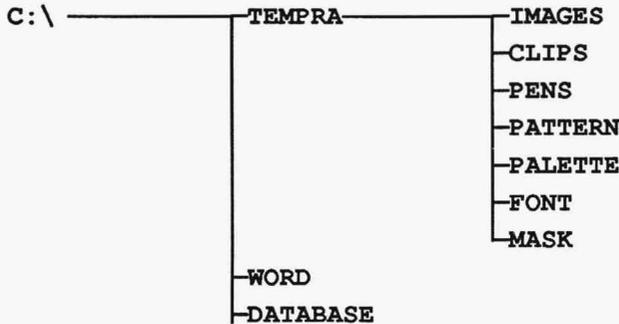
The right side of the Set Disk Directories menu contains the Path display boxes for each type of file. The current drive and path for each file type are displayed in the Path display box beside the file type button. If a path is longer than the display in the box, a ".." after the drive name indicates there are more directory names than are displayed. The path length is limited to 64 characters, including disk drive names and backslashes.



## SET DISK DIRECTORIES HINTS AND COMBINATIONS

Each computer's disk drives and paths are unique. You can define your set of drives and paths to meet your specific needs. Most TEMPRA PRO users will have configured most of their system before using TEMPRA PRO. If you are not familiar with MS-DOS commands and you do not have help, it may be best if you use the setup created by following the TEMPRA PRO installation instructions. When you follow the TEMPRA PRO installation instructions, you create a single directory called TEMPRA that is located on your hard disk. This directory contains all the files supplied by Mathematica, Inc. in the TEMPRA PRO package. This configuration produces results easily and quickly.

An alternative configuration is a directory for TEMPRA and subdirectories for each type of file used by TEMPRA PRO.



You can configure your disks and directories around specific projects. Each project directory would contain the images and clippings associated with that project. Files that are common to all projects could be stored in the TEMPRA directory.





Patterns are similar to clippings. When you save a clipping to disk, that clipping can be used as a pattern in any other image. Because patterns and clippings are interchangeable, you should have the same disk drive and directory for your clippings and your patterns. This allows you to save a clipping from one image and then use it as a pattern in another image.

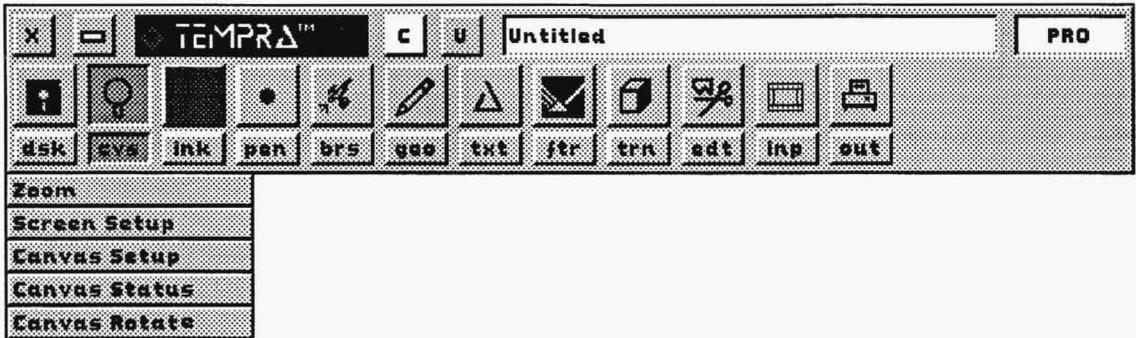
Many users prefer to keep all their TEMPRA PRO images and clippings in one disk directory, such as C:\IMAGES. Whatever arrangement you choose, remember that you must create the directories in DOS before you can use them in TEMPRA PRO.

### ***SET DISK DIRECTORIES TUTORIAL*** \_\_\_\_\_

1. Select the DSK functions push-button on the Main Menu Bar to open the Disk drop-down menu. Select the Directories button on the drop-down menu. The Set Disk Directories menu appears.
2. Select the Clipping button. The button depresses and turns red.
3. Select a drive and, if necessary, a directory name from the Directory Path list box. That directory becomes the current disk drive and path for loading and saving clippings.

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# Canvas Functions



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## INTRODUCTION

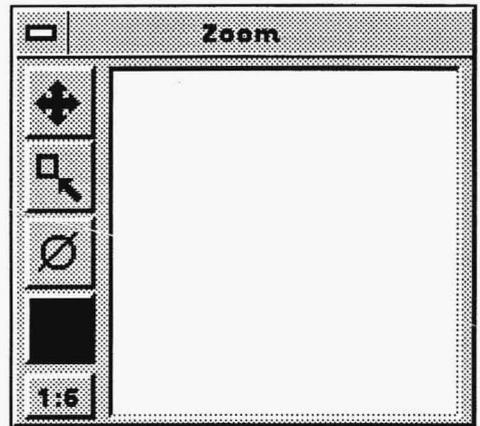
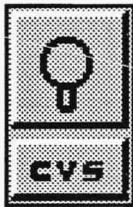
The Canvas functions control the size and view of images you load in TEMPRA PRO. Your computer system and display determine the total environment available. Monitors and image display boards vary in resolution from as low as 320 by 200 to as high as 1024 by 768. The Canvas functions help you take advantage of all your equipment's capabilities.

Generally, most editing uses the same size canvas and screen. TEMPRA PRO lets you edit images far larger than can be displayed on your screen by separating the canvas and the screen. For instance, color scanners can produce images much larger than can be displayed on the computer screen. Some output devices, such as slide cameras, can use a very high resolution, also producing images too large to display on a computer screen. When you edit an image that is larger than the screen, TEMPRA PRO records the changes to the image and the location of your screen display within the entire image.

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**ZOOM**

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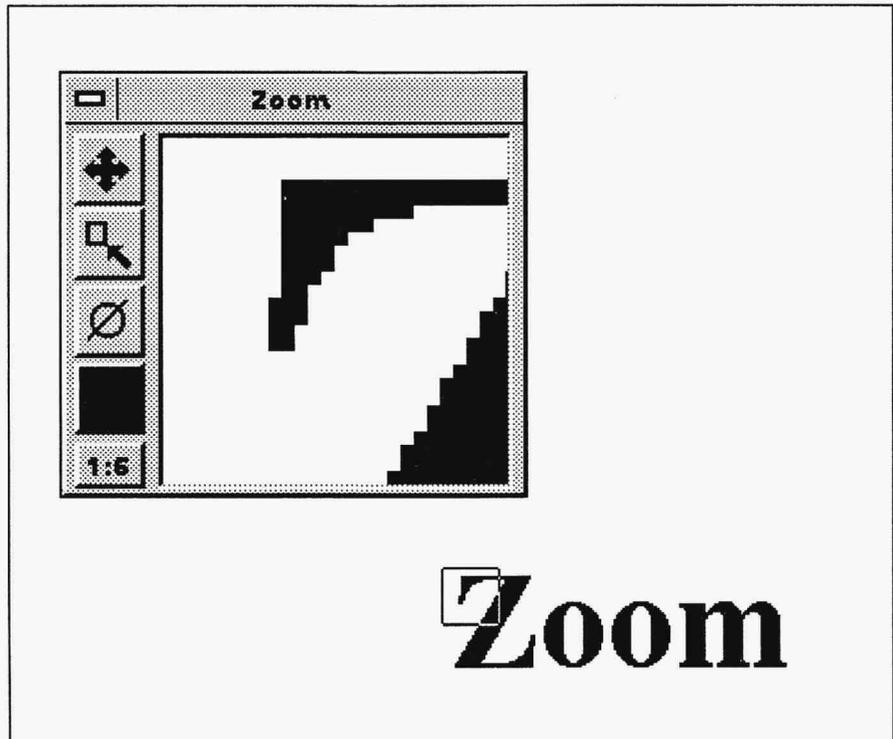
The Zoom menu has an editing box and several icons. Zoom enlarges a section of the canvas and displays it inside the editing box. Zoom shows individual pixels in an image so you can edit one pixel at a time. You can use certain filters, patterns, and color spreads in Zoom, although you cannot use any Geometry tools. As you edit in the editing box, you can see the changes on the canvas. This helps you determine the effect your editing has on the entire image, without leaving the image itself.

Some image capture boards have a Zoom function built into their hardware. When TEMPRA PRO runs on these display boards, the Zoom menu is replaced with a Zoom function in hardware. Hardware Zoom is controlled with function keys F7, F9, and F10 on the keyboard. F10 zooms in, F9 zooms out, and F7 toggles between the current Zoom settings and 0 (no Zoom).

The Zoom menu appears in the middle of your screen when you first select it. If the Zoom menu or the Main Menu Bar is on top of the area you want to edit, you can move the Zoom menu by selecting the title bar across the top of the menu. The menus disappear and a ghost Zoom menu appears. You can move the ghost menu to any part of the screen. Press Select to “paste” the Zoom menu in place. You can continue to move the Zoom menu around on the screen as you edit various sections of your image.



## ZOOM EXAMPLE



The Zoom editing box shows the upper left portion of the letter "Z" in the word "Zoom." A small square on the canvas reflects the part of the image displayed in the editing box. The Zoom magnification is set at 1:6, which means the portion of the image in the editing box has been enlarged six times its original size.



## ZOOM CONTROLS

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### Arrow



The Arrow icon moves the magnification area anywhere on the canvas. This area is represented by a ghost square on the canvas. To move the area in the Zoom preview box, select the Arrow icon and move the mouse. The ghost square on the canvas also moves. When the ghost square outlines the area you want to edit, press Select. You can then edit the area in the editing box.

### Get Color



The Get Color icon picks a color from either the canvas or inside the Zoom editing box and makes it the current color. When you select Get Color, the cursor turns into a Pick icon for you to select a new color. Position the Pick icon over the desired color and press Select. After you select the new color, the Ink functions icon on the Main Menu Bar (if it's on the screen) and the Current Color icon on the Zoom menu change to reflect the color you just selected. You can also select a color inside or outside the Zoom editing box using the F2 key. Position your cursor over the color you want and press the F2 key. The Current Color icon changes to that new color. Get Color and F2 don't work if other functions that affect color, such as Color Spread or Pattern, are active.

### Zoom Undo



The Zoom Undo icon erases the last changes made while using Zoom. The Zoom Undo icon doesn't undo edits made after the magnification area or ghost square has been moved or the Zoom ratio changed. The ability to undo an edit is not a substitute for saving the image to disk.

### Current Color



The Current Color icon only displays the current color, pattern, or spread and cannot be selected. It does not show active filters.

### Zoom Ratio



The Zoom Ratio icon displays and changes the magnification of Zoom. The minimum ratio for Zoom is 1:2 and the maximum is 1:8. The ratio increases one digit each time you select the Zoom Ratio icon. If you select this icon when the ratio is 1:8, the ratio returns to 1:2.



## ZOOM HINTS AND COMBINATIONS

Zooming into the image on your canvas allows you to fine-tune your painting. If you are working from a scan and need to repair portions of the image, Zoom makes that possible. Zoom is also very effective in showing the effects of many filters.

You can use Zoom and Clone together. When Clone is used with Zoom, the point where paint is picked up from the screen can include any visible point including areas that contain menus. It is possible for you to Clone a part of the menu into the Zoom preview box. To avoid this, be careful with the menu positioning when using Zoom and Clone.

If you use the single pixel pen with Freehand, you may not be able to see the pen on the canvas easily. Using Zoom with this pen may be helpful in determining the precise location for painting individual pixels.

**BUZZ  
SAYS**



*When you use Zoom, move the Zoom menu using the menu title bar. This removes the other menus from your screen, so you can see more of your image.*

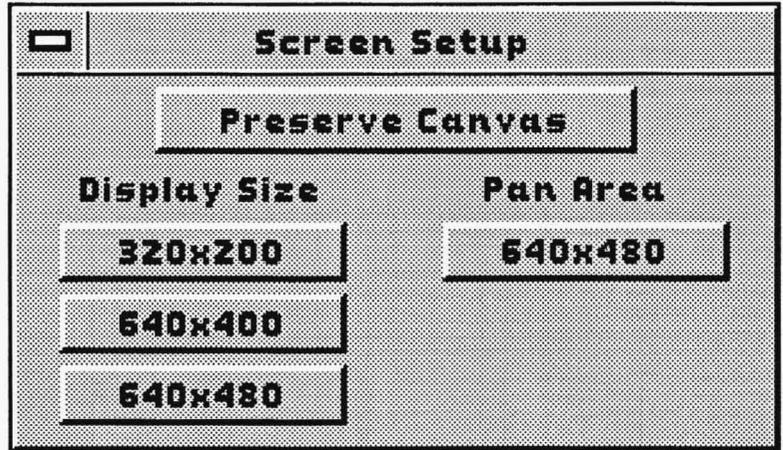


## ZOOM TUTORIAL

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1. Load an image on your canvas.
2. Select the CVS functions push-button on the Main Menu Bar to open the Canvas drop-down menu. Select Zoom from the drop-down menu. The Zoom menu appears in the middle of your canvas.
3. Select the Arrow icon on the Zoom menu and move the mouse. The magnification ghost square showing what is in the Zoom editing box moves on the screen.
4. Press Select when the ghost square outlines the area you want to edit in the Zoom editing box.
5. Select the Get Color icon and the cursor turns into a Pick icon. Move the Pick icon to a color on the canvas or inside the editing box that is different from the current color and press Select. The new color appears on the Main Menu Bar and in the Zoom menu.
6. Select the Zoom Ratio icon. The ratio increases one digit. The portion of the image inside the Zoom editing box changes, and the ghost square outlining your selected area becomes smaller.
7. Position the cursor on a pixel of color inside the Zoom editing box that is different from the color in the Current Color icon. Press Select. The pixel changes to the current color. Continue moving the mouse and pressing Select to change more pixels to the current color.
8. Select the Zoom Undo icon. The changes made in the Zoom editing box disappear from the editing box and the canvas.
9. Experiment with moving the Zoom menu (position the cursor on the Zoom title bar, press Select, move the ghost outline of the menu, and select again to paint down the menu) and choosing different colors with the Get Color icon.

## SCREEN SETUP



The Screen Setup menu changes the resolution of your screen. Screen resolution is measured in pixels — if you select a Display Size of 640 by 480 on the Screen Setup menu, your screen will be 640 pixels horizontally and 480 pixels vertically. Many display boards support multiple display resolutions. The Screen Setup menu displays all the resolutions available for your board. Because TEMPRA PRO uses a minimum of 256 colors, the resolutions available are those that support 256 colors or more. While some Super VGA boards display higher resolutions, they may do so with only 16 colors.

The Pan Area button is available for certain boards that store a large image while displaying a portion of that image. If your board has this hardware panning ability and TEMPRA PRO supports it, you can use the Pan Area buttons. If your board does not have hardware panning support, a single button is available that matches the current resolution.

When you change the resolution of your screen, TEMPRA PRO lets you preserve the current canvas. This prevents you from losing work if you need to change resolutions.



## SCREEN SETUP CONTROLS

### Preserve Canvas

The Preserve Canvas button maintains the current canvas size when you change resolutions. If you change to a higher resolution, such as from 640 by 480 to 1024 by 768, with Preserve Canvas active, your painting area is limited to 640 x 480 pixels until you change your canvas size in the Canvas Setup menu. If you start with a screen resolution and canvas size of 1024 by 768 and reduce the screen resolution down to 640 by 480 pixels with Preserve Canvas active, you get a 640 by 480 screen with slider bars for your 1024 by 768 canvas.

### Display Size

The Display Size radio buttons change the screen resolution TEM-PRA PRO displays. If you select the Preserve Canvas button before you change resolutions, the current canvas is preserved when the screen resolution is changed.

### Pan Area

The Pan Area buttons allow you to select the area that is available for hardware panning. If your display does not support hardware panning, you won't have any choices under Pan Area and the Pan Area button will be a display only. Display boards, such as the AT Vista and the Hercules Graphics Station Card, support a Pan Area.

### Reduce

The Reduce button appears on the Screen Setup menu only when you use display boards that support hardware panning. If you choose a Pan Area that is larger than your Display Size, selecting Reduce allows you to view your entire canvas at once. You can't paint or edit while in the Reduce mode. Press Cancel to return to your current screen and menus.



## SCREEN SETUP HINTS AND COMBINATIONS

The resolution you choose for editing depends on the type of image you're editing, your need to see more of the image, and the resolution that is most comfortable for you. Some displays give only one choice for resolution. TEMPRA PRO cannot provide more resolution on the screen than your display board can handle. Basic VGA display boards support only 320 by 200 pixels in 256 color mode. Some display boards that can support higher resolutions may have variable amounts of memory — additional memory is required for higher resolutions. Check your display board documentation for specific information on your board.

### BUZZ SAYS



*You don't have to use the highest resolution to do your editing. If you have the option, choose a resolution that makes you comfortable. Sometimes the resolution is set so high, Buzz can't see the pixels.*

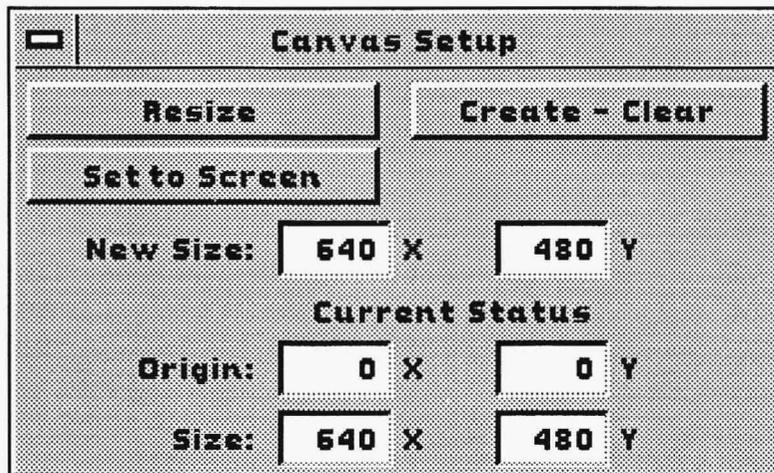


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## SCREEN SETUP TUTORIAL

1. Select the CVS functions push-button from the Main Menu Bar to open the Canvas drop-down menu. Select Screen Setup from the drop-down menu. The Screen Setup menu appears in the middle of your canvas.
2. Select Preserve Canvas if you have an image loaded on the canvas.
3. Select a display size that is not currently selected. The screen changes to that size. If Preserve Canvas was active, the canvas and its image are still available. (Some display boards have only one resolution available. If your display board has only one resolution available, you have only one option for your screen resolution.)

## CANVAS SETUP



The Canvas Setup menu controls the size of your images and lets you create an image larger than your display screen. The Canvas Setup menu also displays the status of your canvas. When a canvas is larger than the display area of your screen, slider bars appear at the side and bottom of your display. If your canvas is larger than your display area in only one dimension, such as a display resolution of 640 by 400 with a canvas of 640 by 480, only one slider bar appears. The canvas slider bars are available only when the Main Menu Bar is on the screen, and they let you move through the large canvas area you're editing.



## CANVAS SETUP CONTROLS

### Resize



Resize

The Resize button changes the current size of your canvas to match the size in the New Size manual fine-tuning buttons. When you select Resize, TEMPRA PRO changes the image on the current canvas to match the size of the new canvas.

If the new size for your canvas is larger than the current canvas, TEMPRA PRO increases the number of pixels in the canvas to match the values in the New Size fine-tuning buttons. The image on the screen is expanded to fit the new canvas size. If the new canvas size is smaller than the current canvas, TEMPRA PRO reduces the number of pixels in the canvas to match the values in the New Size fine-tuning buttons. TEMPRA PRO samples the pixels in the original canvas and places a representative sample on the new canvas.

Resize can create an image with a new canvas size. The new image will not have exactly the same pixels as the old image. When the canvas is made larger, some pixels are duplicated. When the canvas is made smaller, some pixels are lost. Both processes degrade the quality of the original image.

If you increase only one dimension of your canvas, TEMPRA PRO adds black to fill in the area of the canvas that does not have the image in it. If you increase the X dimension (width), black fills the left and right sides of the image. If you increase the Y dimension (height), black fills the top and bottom of your image. The image itself does not change.

### Create-Clear



Create - Clear

The Create-Clear button creates a new canvas that contains the current Clear color. Any image on the canvas is erased and replaced with the Clear color.



### Set to Screen

#### Set to Screen

The Set to Screen button causes the current screen size to become the current canvas size. The canvas can be larger or smaller than the screen when this button is selected, meaning a small canvas will be made larger (to match big screens) and a large canvas made smaller (to match small screens). In both cases, the canvas size becomes the size of the screen. If the canvas is larger than the screen area, the canvas area not visible on the screen is lost. If the canvas is smaller than the screen, the blank area around the canvas becomes a part of the canvas. In this way, you could set a 320 by 200 image to the screen size, in which case it becomes a 640 by 480 image.

### New Size

New Size:  X  Y

The New Size manual fine-tuning buttons allow you to set the new size for your canvas. After you have entered the X and Y values in the New Size buttons, the Resize or Create-Clear buttons can be used to create the new image. The smallest canvas that may be used by TEMPRA PRO is 16 by 16 pixels. The largest is 8192 by 8192 pixels. The X value is the number of pixels across your canvas. The Y value is the number of pixels up and down your canvas. To change a value using these fine-tuning buttons, move the cursor into one of the buttons and press Select. The button turns blue and you can type a new number. Use the Enter key or press Select to activate the entry.

### Current Status

Current Status  
Origin:  X  Y  
Size:  X  Y

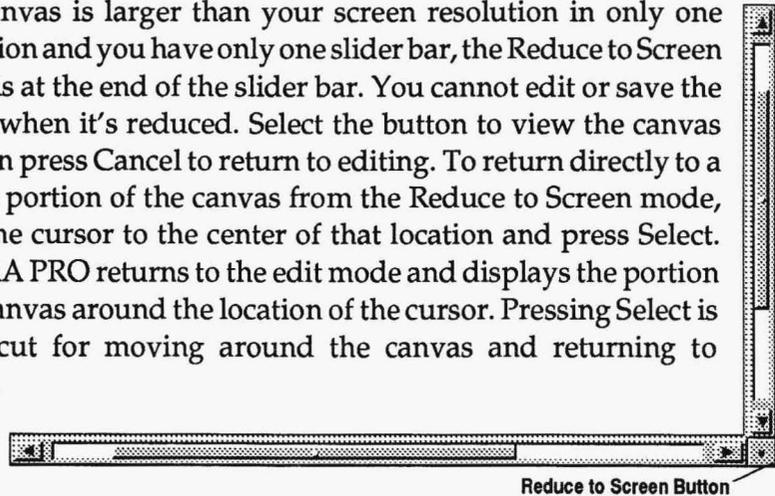
Only the Origin buttons on Current Status can be adjusted. Changing the Origin coordinates lets you move around on a large canvas. The Origin coordinates show the location of the bottom left corner of the screen in relation to the bottom left corner of your canvas. If your canvas size is the same as or smaller than your screen resolution, the Origin coordinates remain at 0, 0. The Size buttons tell you the size of the current canvas and aren't adjustable.



## Canvas Sliders

When you use a canvas that is larger than your screen resolution, sliders appear on the right side and bottom of your screen. These sliders let you move around the larger canvas. Each end of the slider has an arrow. When you select the arrow, the display moves one pixel in the direction of the arrow. To move quickly through the canvas, place the cursor on the slider and press Select. The sliders have a small white dot on them. When you place the cursor on a slider and press Select, the slider moves the dot as close as possible to the cursor. If you place the cursor a small distance from the dot, the slider moves the display a small distance. If you place the cursor at the very end of the slider bar, the slider moves the display to the end of the canvas.

At the bottom right corner of the screen where the slider bars meet is a small square button with a black dot in it. This is the Reduce to Screen button, which lets you view the entire canvas at once. If your canvas is larger than your screen resolution in only one dimension and you have only one slider bar, the Reduce to Screen button is at the end of the slider bar. You cannot edit or save the canvas when it's reduced. Select the button to view the canvas and then press Cancel to return to editing. To return directly to a specific portion of the canvas from the Reduce to Screen mode, move the cursor to the center of that location and press Select. TEMPRA PRO returns to the edit mode and displays the portion of the canvas around the location of the cursor. Pressing Select is a shortcut for moving around the canvas and returning to editing.





## CANVAS SETUP HINTS AND COMBINATIONS

When you enlarge your image by selecting **Resize**, it is helpful to keep the same aspect ratio in the new image as in the old. The aspect ratio is the ratio of the height to the width of an image. An image size of 640 by 480 replicates to 1024 by 768 and maintains the same aspect ratio. If you do not maintain the same aspect ratio, the result is an image that is stretched more in one direction than in the other.

When you load an image in **TEMPRA PRO**, the canvas automatically adjusts to the size of that image. Check the **Canvas Setup** (or **Canvas Status**) menu to see the exact size of the new canvas.

**BUZZ  
SAYS**



*Color slides have an aspect ratio of 3 across to 2 up and down. A canvas 3000 by 2000 or 1500 by 1000 fits neatly into a slide.*

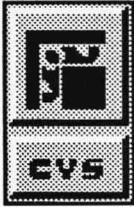


## CANVAS SETUP TUTORIAL

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1. Select the CVS functions push-button from the Main Menu Bar to open the Canvas drop-down menu. Select Canvas Setup from the drop-down menu. The Canvas Setup menu appears.
2. Note the X value in the New Size fine-tuning box. Select the New Size fine-tuning box with the X next to it. The box changes color and a flashing cursor appears in it. Type in a number that is larger than the number that was displayed before you selected the box. (We suggest typing in 1200.) Press Enter on the keyboard and the number appears in the fine-tuning box.
3. Note the Y value in the New Size fine-tuning box. Select the New Size fine-tuning box with the Y next to it. The box changes color and a flashing cursor appears in it. Type in a number larger than the number that was display before you selected the box. (Again, we suggest 1200.) Press Enter on the keyboard and the number appears in the fine-tuning box.
4. Move the cursor to the Create-Clear button and press Select. The canvas changes size to a 1200-by-1200 canvas.
5. The total size of the canvas is 1.44 megabytes for VGA or other 8-bit displays.

## CANVAS STATUS



Canvas Status				
Origin:	<input type="text" value="0"/>	X	<input type="text" value="0"/>	Y
Size:	<input type="text" value="640"/>	X	<input type="text" value="480"/>	Y

Only the Origin buttons in Canvas Status can be adjusted. Changing the Origin coordinates lets you move around on a large canvas. The Origin coordinates show where the bottom left corner of the screen is located in relation to the bottom left corner of your canvas. The Size buttons tell you the size of the current canvas and aren't adjustable. These buttons are duplicates of the ones in the Screen Setup menu.



## CANVAS STATUS HINTS AND COMBINATIONS

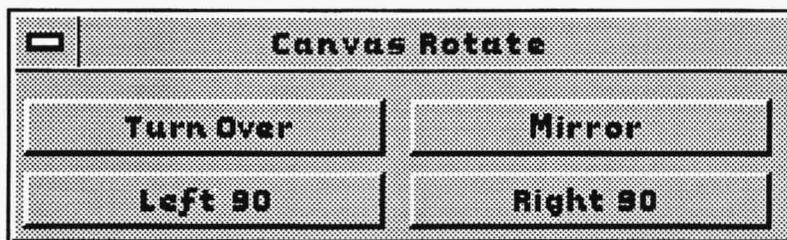
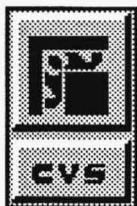
The Canvas Status menu is provided for your information. If you have exact requirements or need to move around on the canvas using coordinates, the fine-tuning buttons in Canvas Status are very useful.

**BUZZ  
SAYS**



*You can import a clipping and paste it onto the canvas in the exact spot if you know the exact location of your origin. The bottom left of the canvas is 0 by 0. If you want to make a composite of four 640 by 480 images on a 1280 by 960 canvas, you would set the origin at: 1) 0 by 0, 2) 640 by 0, 3) 640 by 480, and 4) 0 by 480.*

## CANVAS ROTATE



Canvas Rotate allows you to change the orientation of an entire image from landscape to portrait. Rotation happens on the actual image file as it is stored on your hard disk. It's not necessary to see all the image on the screen in order to rotate it (that is, you can use images that are larger than screen resolution). There are four different types of image rotation. An image that has been rotated can be returned to its original state by applying the complementary rotation. A rotated canvas cannot be "unrotated" using Undo.



## CANVAS ROTATE CONTROLS

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### Right 90

A rectangular button with a textured background and a double border, containing the text "Right 90".

**Right 90**

The Right 90 selection rotates the image on the canvas 90 degrees clockwise.

### Left 90

A rectangular button with a textured background and a double border, containing the text "Left 90".

**Left 90**

The Left 90 selection rotates the image on the canvas 90 degrees counterclockwise.

### Turn Over

A rectangular button with a textured background and a double border, containing the text "Turn Over".

**Turn Over**

Turn Over rotates the image 180 degrees so it is upside down.

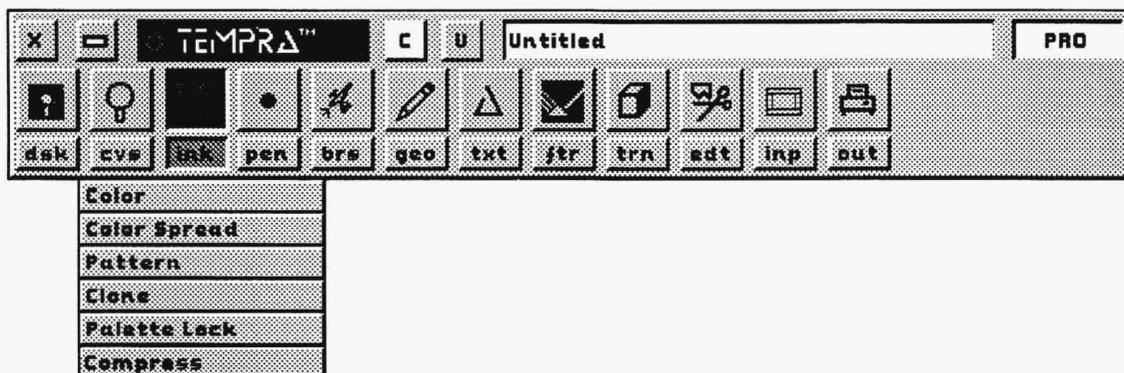
### Mirror

A rectangular button with a textured background and a double border, containing the text "Mirror".

**Mirror**

Mirror reverses the images from left to right.

# Ink Functions

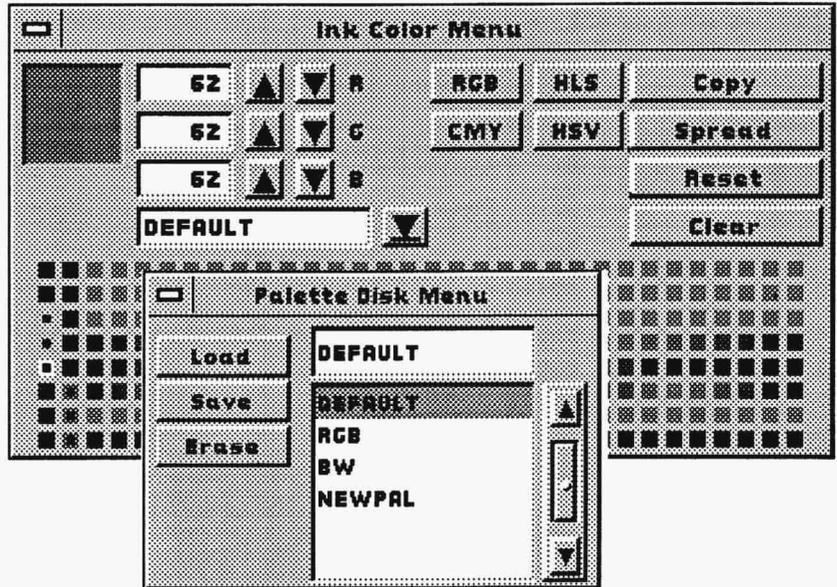
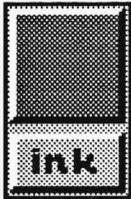


## INTRODUCTION

The Ink functions provide the color control necessary to produce photorealistic-quality images. Color control includes selecting, modifying, and creating color spreads and patterns. You can also lock and compress palette colors, and clone areas of your image.

TEMPRA PRO displays a minimum of 256 colors. Standard and enhanced VGA displays use 256 colors, while others may use more. Display adapters that display more than 256 colors are called true-color display adapters. A display that uses 16 bits per pixel displays 32,000 possible colors, while a display that uses 24 bits per pixel can display more than 16 million colors. The color ability of your display, not how your image file is saved, determines the colors available in your final image. TEMPRA PRO displays true-color images on VGA displays by dithering the colors in the file and displaying colors as closely as possible to the original colors within the 256-color limit. A dithered image may not be suitable for editing on an 8-bit display, such as a VGA. To edit an image saved with more than 256 colors on an 8-bit display, use a color reduction program, such as Cmap.

## INK COLOR



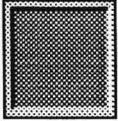
Selecting Color from the Ink functions drop-down menu opens the Ink Color menu. The Ink functions icon on the Main Menu bar always displays your current color, spread, or pattern. The Ink Color menu displays your palette and provides options for selecting and adjusting colors on the palette. You can select colors from the 256-color palette by moving the cursor to a color on the palette and pressing Select. The color you select becomes the current color. The current color is outlined on the palette and displayed in the Ink Color menu preview box and in the Ink functions icon on the Main Menu Bar.

The Ink Color menu includes a pull-down menu for loading, saving, and erasing palettes you create. Select the pull-down menu (underlined arrow) on the Ink Color menu to open the Palette Disk menu. To save the current palette as a file, move the cursor to the filename box above the list box, press Select, and type a name for your new palette. Select the Save button. To load or erase existing palette files, either select the file from the list box and press the appropriate button or type the name in the filename box and press the button.



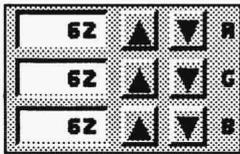
## INK COLOR CONTROLS

### Current Color Preview Box



The current color preview box displays the color you select from the palette or canvas or that you mix using the fine-tuning buttons. The color in this preview box matches the color in the Ink functions icon on the Main Menu Bar.

### Ink Color Fine-tuning Buttons



The Ink Color fine-tuning buttons allow you to adjust the color values of any color from the palette. This allows you to mix your own colors according to whatever color model you select. The letters that appear beside the up-and-down arrows (such as “RGB”) change depending on which color model is active. For example, if the RGB color model is active, the “R” fine-tuning button is used to adjust the red component of the selected color, the “G” button controls green, and the “B” button controls blue. You can adjust the fine-tuning buttons either by using the up-and-down arrows or by selecting the number box and typing in a number.

### RGB Color Model



The RGB color model gives you a palette based on the mixture of the three additive primary colors (red, green, and blue). You can adjust the amount of red, green, or blue in an existing hue using the fine-tuning buttons. The range is from 0 to 63.

### CMY Color Model



The CMY color model gives you a palette based on the mixture of the three subtractive primary colors (cyan, magenta, and yellow). Subtractive primary colors are complements of additive primary colors. Cyan is a complement of red and is produced by mixing green and blue. Magenta is a complement of green and is produced by mixing red and blue. Yellow is a complement of blue and is produced by mixing red and green. Mixing complementary colors produces white. White minus a complementary primary color produces a subtractive primary color. The values range from 0 to 63.



The printing industry often uses the CMY color model to print colored pigments onto hard copy. When illuminated by white light, cyan, magenta, and yellow each absorb a color. So, if a computer printer transfers cyan and yellow ink on a surface to create green, the cyan and yellow absorb red and blue when illuminated by white light, while the green is reflected.

### **HLS Color Model**



The HLS color model is based on three qualities of color, rather than colors themselves. The qualities are hue, luminance, and saturation. Hue refers to the distinction between colors; that is, red, yellow, green, and blue are colors that differ in position in the color spectrum. Luminance refers to the illumination of color: its brightness between the two extremes of black and white. Saturation refers to the vividness of hue or the strength of the color. The amount of white diluting a color determines the saturation level. The saturation level of red, for instance, could range from deep ruby (little white dilution) to pale pink (much white dilution). As you adjust the fine-tuning buttons, you can change the quality of a color's hue, luminance, and saturation. When the HLS color model is active, adjusting the fine-tuning buttons alters the percentage (0-100%) of these qualities.

### **HSV Color Model**



The HSV color model also describes qualities of color, rather than the colors themselves. These qualities are hue, saturation, and value. The HSV color model is useful for adjusting a color's tint, shade, and tone. A value of 0% yields black, while a saturation of 0% and value of 100% yields white. The best way to use the HSV color model is to start with a pure pigment; that is, the hue, saturation, and value are all 100%. To add white pigment, decrease the saturation, but leave the hue and value constant. To add black pigment, decrease the saturation, but leave the hue and saturation constant. When the HSV color model is active, adjusting the fine-tuning buttons alters the percentage (0-100%) of these qualities.



## Copy

### Copy

The Copy button duplicates a color from one location on the palette to another. (Usually, you should not copy colors onto the first two columns of colors on the palette as they provide the colors for the menus.) To copy, select the color you want to copy, select the Copy button, and then select the destination on the palette you want to copy that color to.

## Spread

### Spread

The Spread button lets you create a specified color spread between two colors on the palette. Since Spread operates from left to right and top to bottom, the first color selected for the spread should be on the top left and the last color on the bottom right. To create a color spread, select the Spread button. Then select the first color you want in your spread. It is highlighted with a left bracket ( [ ). Finally, select the last color in your spread — which is highlighted with a right bracket ( ] ). TEMPRA PRO displays a new palette with a color spread between the selected colors. The current color model will affect your spread. For instance, a spread between blue and white with the RGB or CMY color models contains shades of blue to white — the same spread done with the HLS or HSV color models will contain the various hues found between blue and white on the color wheel.

## Reset

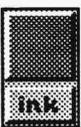
### Reset

The Reset button returns the palette to the default color palette.

## Clear

### Clear

Clear specifies the color used to clear the canvas. To change the Clear color, first select a color on the palette. Then select the Clear button on the Ink color menu. The button changes color to reflect the clear color and matches the color in the "C" (Clear) button on the Main Menu Bar. Although selecting the "C" button on the Main Menu Bar initiates the actual clearing process, the color on the Clear button in the Ink Color menu determines what color the canvas is cleared to.

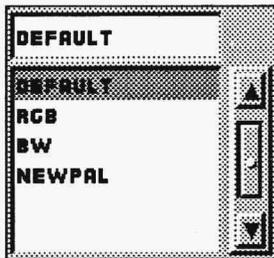


## Display Box and Pull-down Menu Button



The Ink Color menu has a display box with a pull-down menu button to the right. Selecting the pull-down menu button (the underlined arrow) opens the Palette Disk menu, where you can load, save, and erase palette files. The display box shows the filename of the current palette on the Ink Color menu or the last filename selected from the Palette Disk menu list box. You can type in the display box, but you must still select the pull-down menu button to open the Palette Disk menu to load, save, or erase a palette file.

## Palette Disk Menu List Box



The Palette Disk menu has a list box that shows the palette files available. The list box lists the files alphabetically. The current file or the last filename selected from the list box is shown in the filename box above the list box and is highlighted in the list box. To save a new palette file, select the filename box and type in the filename. To load, erase, or save an existing file, either select the filename box and type in the filename or select the file from the list box. Then select the appropriate function button (Load, Save, or Erase). The elevator bar on the right side of the list box is used to scroll through the list of palette filenames.

### Palette Disk Menu - Load



The Load button in the Palette Disk menu allows you to load palette files. Select the file from the list box or type the filename in the display box and select Load. That palette file becomes the current palette in the Ink Color menu.

### Palette Disk Menu - Save



The Save button in the Palette Disk menu allows you to store the palettes you have created in a file.

### Palette Disk Menu - Erase



The Erase button in the Palette Disk menu allows you to delete palette files. (You cannot delete any other types of files in this menu.) Before you erase, a message box appears to confirm the deletion.



## Ink Color Palette

The Ink Color Palette displays the colors available for editing in TEMPRA PRO. On 8-bit displays, the 256 colors on the palette are also the colors that comprise the current image. On 16-, 24-, and 32-bit displays, many more colors are available for images than will fit on the palette. If you wish to edit a color that doesn't appear on the palette while using a true-color display, you must first "map" that color to the palette by positioning the cursor over that color and pressing Select. The selected canvas color appears on the palette in whatever position was highlighted (outlined with a box) when you selected the canvas color. The palette has two sections — the first two columns are read from top to bottom and are usually reserved for the TEMPRA PRO menu colors. The rest of the palette is read in rows from left to right, top to bottom. The palette color positions are numbered 0-255. Position 0 is at the top of the first column on the left side of the palette.

## INK COLOR HINTS AND COMBINATIONS

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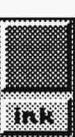
The Ink Color menu gives you complete control over the colors you use to paint. If your canvas already has a variety of colors, experiment with creating variations of those colors by selecting a color so it becomes the current color and adjusting it with the fine-tuning buttons. The color changes in the Ink Color menu preview box, on the Main Menu Bar, on the Ink Color menu palette, and on the canvas as well. (On boards with more than 256 colors, adjusting a color on the palette changes the canvas only if that color has been "mapped" onto the palette.)

The color model you choose to work with will depend on your particular taste and how you learned about color. You can experiment with the different color models to see how colors are treated. Although TEMPRA PRO mixes colors using numbers, the principles of color mixing are still applicable.

**BUZZ  
SAYS**



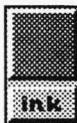
*Buzz says he has a different set of colors for sunsets, tropical jungles, and feathers. He keeps them on disk for each type of artwork he creates and edits.*



## ***INK COLOR TUTORIAL***

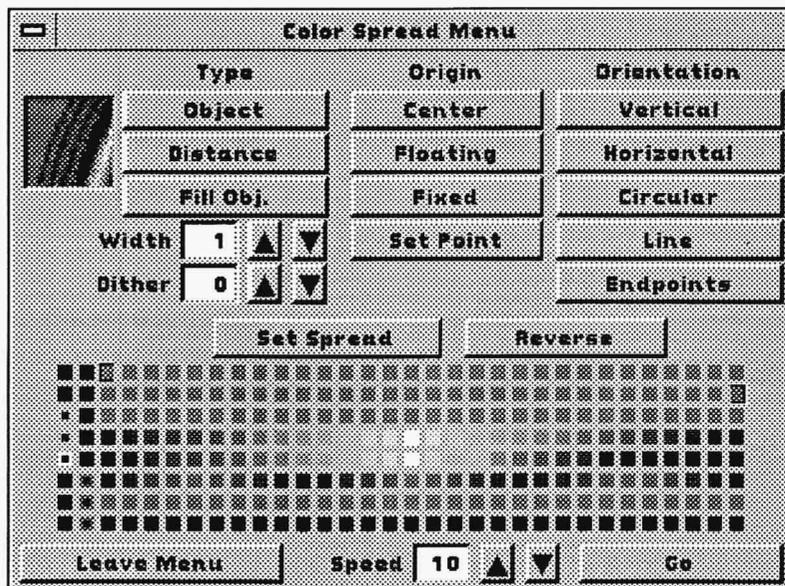
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1. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. The Ink Color menu appears.
2. Select the third color from the left on the top row of colors. A box appears around the color. This color is the first available color that does not contain colors used in the menus.
3. Select the RGB button to ensure you are working with the Red-Green-Blue color model.
4. Move your cursor to the Red fine-tuning button (labeled "R") and select the number box. The box changes color and a flashing cursor appears inside it. Type in the number "63" and press Enter. The color changes in the preview box.
5. Follow the same procedure as step 4 to change the Green and Blue fine-tuning buttons (labeled "G" and "B") to read "63" also. The current color in the preview box, the Main Menu Bar icon, and the palette should be white.
6. Move the cursor over five colors to the right of the color you just adjusted and press Select. This color now has a box around it.
7. Follow the same procedure as in step 4, but change the Red, Green, and Blue fine-tuning buttons to "0." The preview box, Main Menu Bar icon, and palette should show black as the current color.
8. Select the Spread button. Then select the first color you adjusted. (It's the third color from the left on the top row.)
9. Select the second color you adjusted (five colors to the right of the first color you selected). The menus disappear and then reappear with the palette adjusted to the new color spread. Notice that the colors between the first and second colors you selected have changed.



10. Select the pull-down menu button in the Ink Color menu. The Palette Disk menu appears.
11. Place the cursor in the filename box above the list box and press Select. The filename box changes color. Type **"TEST"** as your palette filename and press Enter.
12. Press the Save button. The **"TEST"** file appears in the list box and is highlighted.
13. Press Cancel on your mouse or select the Remove Menu button at the top left of the Palette Disk menu. The Palette Disk menu disappears and the word **"TEST"** appears in the display box to the left of the pull-down menu button.
14. Select the pull-down menu button again. The Palette Disk menu reappears. Make sure **"TEST"** is still highlighted in the list box and displayed in the filename box.
15. Select the Erase button. A message box appears confirming the deletion. Select **"Yes."** The **"TEST"** file disappears from the list box and filename box.
16. Press Cancel to return to the Ink Color menu.

## COLOR SPREAD



The Color Spread menu lets you create different spread effects, such as gradations and, on 8-bit displays, animated color cycles. You set the range of the spread and the type of spread using the various controls on the Color Spread menu. As TEMPRA PRO paints, the colors are cycled onto the canvas. You can create spreads that radiate from the center or horizontal and vertical spreads. You can also control the width of the colors in the spread and determine whether the spread colors are distinct and sharp or whether they blend into one another.



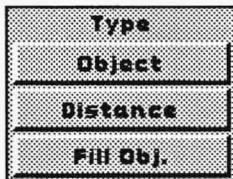
## COLOR SPREAD CONTROLS

### Preview Box



The Color Spread preview box displays the current spread. The display changes as you select different controls. The spread in the preview box matches the spread in the Ink icon on the Main Menu Bar.

### Type



The type of color spread you choose determines the appearance of the spread. An Object spread applies a different color for each object or shape you paint (such as a Geometry figure). When Object is active, the Fill Object, Origin, Orientation, and Dither options are unavailable. Distance applies a repeating color spread across your canvas. When Distance is active, the Set Point and Endpoints options are not available. Fill Object spread fills the entire object or shape with the current spread. Fill Object only works when Distance is active (but Distance can be used alone). When Fill Object is active, the Width, Setpoint, and Endpoints options are unavailable.

### Width



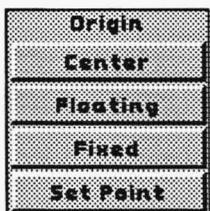
The Width fine-tuning box determines the number of pixels or objects TEMPRA PRO paints before cycling to the next color. The range is from 1 to 20, with 1 representing the narrowest width of color and 20 representing the widest width.

### Dither



The Dither fine-tuning box randomly mixes colors from the color spread. The range is from 0 to 8, with 0 representing a sharp, distinct separation between colors and 8 representing the most random mixture.

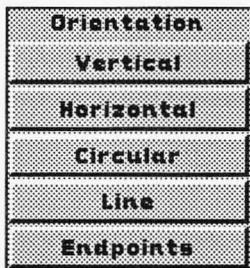
### Origin



The Origin buttons determine the starting point of the color spread. This option can only be used with the Distance and the Fill Object color spreads. The Center button sets the starting point at the center of the spread. The Floating button provides an adjustable starting point, and you must set the origin each time you paint an object on the canvas.

The Fixed button is used in combination with the Set Point button. Set Point only becomes active when the Fixed button is selected. When you select the Set Point button, the Main Menu Bar clears from the screen and a “+” sign appears on the canvas marking the starting point of the color spread. You can either cancel to use that starting point or press Select at another location on the canvas to mark another starting point. After you press Cancel or Select, the Main Menu Bar and the Color Spread menu reappear. The Set Point button does not remain depressed (active). You must select it each time you want to change the starting point for the Fixed origin. Sometimes the Origin button may be overridden by the Orientation selection — for example, a Floating origin has no effect when a Line and Endpoints orientation is used.

### Orientation



The Orientation buttons determine the direction of the color spread. The Vertical button creates a color spread from side to side. The Horizontal button creates a color spread from top to bottom. The Circular color spread creates a spread that radiates from the center outward in a circle. The Line button is used in combination with the Endpoints button. Endpoints becomes active only when Line is selected. When you select Endpoints, the Main Menu Bar disappears from the screen and you can stretch a line on the screen that the spread flows out from. This line may be stretched in any direction, including diagonally. To stretch a line, move the cursor to the desired starting point for the line and press Select. Move the mouse to stretch the line and press Select again to nail down the line. The Main Menu Bar and the Color Spread menu will return. Cancel when you are ready to paint your spread. When Line and Endpoints are used, they override any of the Origin buttons because the stretched line determines the flow of the color spread. The Endpoints button must be selected each time you want to change the Line orientation.

### Set Spread



Set Spread lets you select the colors that you want in the color spread. To set a color spread, select the Set Spread button. When the Pick icon appears, select the first color of your spread and then the last color of the spread. The selected colors are outlined on the palette. The spread runs from the top left of the palette to the bottom right.



## Reverse

A rectangular button with a dotted border and the word "Reverse" in a bold, sans-serif font.

The Reverse button changes the direction of the spread from the bottom right of the palette to the top left. You can select Reverse either before or after a spread has been set. The Reverse button remains depressed until you select it again to “unreverse” the spread. The effect of the Reverse button is reflected in the Preview Box on the Color Spread menu and in the Ink icon on the Main Menu Bar.

## Leave Menu

A rectangular button with a dotted border and the words "Leave Menu" in a bold, sans-serif font.

The Leave Menu button is used for animating color spreads. Leave Menu animates the display with the Color Spread menu still on the screen. Select the Leave Menu button and then select Go to start the animation. The menus and the canvas behind them become animated. To stop the animation, press Cancel on the mouse.

## Speed

A control element consisting of the word "Speed" on the left, a small rectangular box containing the number "10", and two small triangular arrows (one pointing up, one pointing down) to the right.

The Speed fine-tuning button determines how fast the spread animates. The range is from 1 to 18, with 1 being the slowest speed and 18 being the fastest. You can change the speed by either using the up-and-down arrows or selecting the Speed number box, typing in the number, and pressing Enter.

## Go

A rectangular button with a dotted border and the word "Go" in a bold, sans-serif font.

Selecting the Go button removes the Main Menu Bar and Color Spread menu from the screen (unless Leave Menu is active) and starts the animation of the color spread on the canvas. To stop the animation, press Cancel on the mouse. The Main Menu Bar and Color Spread menu automatically return to the screen after you press Cancel to stop the animation.

Color Spread or cycle animation is available only on 8-bit (256-color) displays, such as standard or enhanced VGAs.

## COLOR SPREAD HINTS AND COMBINATIONS

The two main types of Color Spread, Distance and Object, create two very different effects. Use Distance to create smooth shades of graduated color inside each shape you draw. Use Object to paint a number of shapes, each in a different color of the spread.

Color Spread gives the impression of depth to a shape by provide shading. This is useful for any shape that has highlights or has light falling on it. Areas with a lot of light should receive the lightest colors, while shadowed areas should receive the darkest.

Use Color Spread to make backgrounds with a range of color. You can create a horizon line in an image by making two spread that radiate from the horizon line. Use the Reverse option to flow colors in the correct direction.

The Object type of Color Spread can color each painted shape with a different color of the spread. The type of computer and size of the shape determines how much time TEMPRA PRO needs to paint each one. You may need to set the Width to 1 in order to get the most number of colors on the canvas.

Make your Color Spread come alive by using the animation effect on 8-bit displays. Try any sort of spread and then animate it. The colors will animate as fast as your computer will allow. Use the Leave Menu button to see what TEMPRA PRO is doing to the color palette.

**BUZZ  
SAYS**



*Buzz says he leaves a "Gone to Lunch" sign on his computer and turns on animation. Sometimes, the other birds like the display more than they like Buzz.*



## **COLOR SPREAD TUTORIAL**

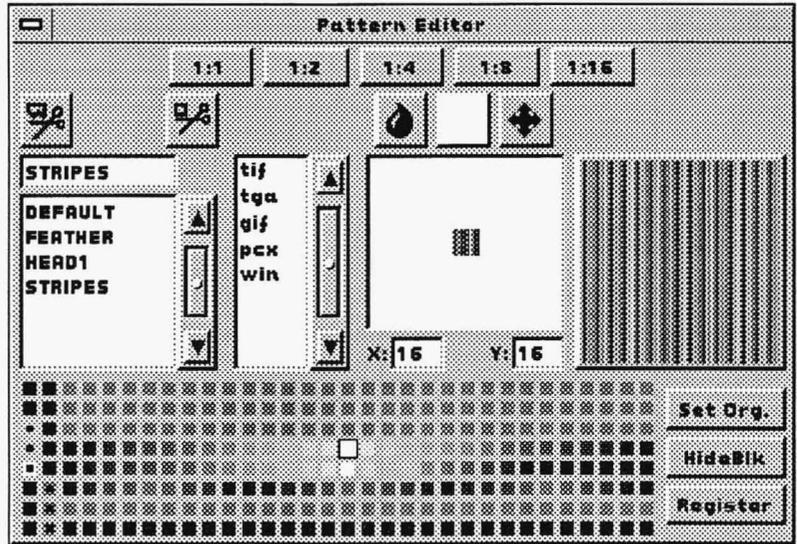
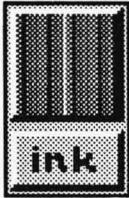
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1. Make sure the default Ink palette is loaded.
2. Select the INK functions push-button from the Main Menu Bar to open the Ink drop-down menu. Select Color Spread from the drop-down menu. The Color Spread menu appears.
3. Select Set Spread from the Color Spread menu. The cursor changes into a Pick icon.
4. Select the third color from the left on the top row to be the starting point of the color spread. A left-hand bracket appears around the color. Select the last color at the right side of the top row on the palette to be the ending point of the color spread. A right-hand bracket appears around that color.
5. Select Object from the Color Spread menu.
6. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. The Rectangle menu appears. Activate Filled, Repeat, and Corners on the Rectangle menu.
7. Press Cancel on the mouse to remove the Main Menu Bar from the screen.
8. Move to any location on the canvas and press Select to position the upper right corner of your rectangle. Move the mouse and a ghost rectangle appears. Move the mouse until the rectangle fills a quarter of your screen.
9. Press and hold the Select button and move the mouse back toward the starting point of your rectangle. Continue holding Select and moving the mouse to make more rectangles. TEMPRA PRO paints the rectangles with different colors. Each new rectangle paints over a portion of the previous rectangle, which leaves a part of its color behind. Release the mouse button to stop painting.



10. Press Cancel on the mouse to return to the Main Menu Bar.
11. Select the INK functions icon on the Main Menu Bar to open the Color Spread menu. Select Distance, Fill Obj. (Fill Object), Center, and Horizontal on the Color Spread menu.
12. Select the GEO functions icon on the Main Menu Bar to open the Rectangle menu. Turn off Repeat.
13. Cancel to return to the canvas. The menus disappear.
14. Again, start a rectangle on the canvas by pressing Select. Choose a location away from the set of rectangles you painted earlier. A ghost image of the rectangle appears. Move the mouse until the ghost rectangle covers about a third of the screen and press Select. The rectangle fills with all the colors in the color spread.
15. Press Cancel on the mouse to return to the Main Menu Bar.
16. If you're using a 256-color (8-bit per pixel) display, select the INK functions icon on the Main Menu Bar to open the Color Spread menu. Select the Go button on the Color Spread menu to starting animating the image you created. Press Cancel to stop the animation.

## PATTERN EDITOR



The Pattern Editor menu lets you create patterns from entire images or portions of images. You can store patterns on disk as clippings and load them into the Pattern Editor menu for use and for editing. If you use a full image as a pattern, you can produce the effect of peeling one image away to reveal another.

You apply patterns using any Geometry, Brush, or Text function. Filter functions can also be used with Patterns. Pattern doesn't have a pull-down menu for saving files like the Ink Color, Pen Editor, and Mask menus. You save and erase patterns as images and clippings in the Files menu, but you load images and clippings as patterns using the Pattern Editor menu. You can edit a pattern using the editing box, and you can clip a pattern from the screen using the Clip Polygon and Clip Rectangle options provided on the Pattern Editor menu.



## PATTERN EDITOR CONTROLS

### Ratio



The Ratio buttons across the top of the Pattern Editor menu determine the magnification of the pattern in the editing box on the Pattern Editor menu.

### Clip Polygon



The Clip Polygon icon lets you cut a polygon from the image and use it as the current pattern.

### Clip Rectangle



The Clip Rectangle icon lets you cut a rectangle from the image and use it as the current pattern.

### Inkdrop



The Inkdrop icon fills the entire current pattern with the current color shown in the Current Color icon to the right of the Inkdrop icon.

### Current Color



The Current Color icon displays the color being used for editing. When you select the Current Color icon, a Pick icon appears for you to select a color from the edit box, the palette, or your image.

### Move

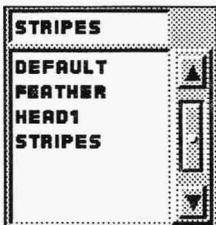


The Move icon shifts the pattern up, down, right, and left in the edit box and/or lets you position the edit area rectangle in the preview box. There are two ways to move around on the pattern for editing. One way is to position the cursor over the Move icon and press and hold the Select button down while you move the mouse in the direction you want. The pattern moves around in the edit box, and the edit area rectangle in the preview box also moves. The other way is to select the Move icon (this makes the edit area rectangle appear in the preview box) and then select the edit area rectangle and move the mouse to move the rectangle around on the pattern.



### List Box

The Pattern Editor has a list box that displays an alphabetical listing of all the files that can be used as patterns. Any TEMPRA PRO image or clipping can be used as a pattern. The filename box above the list box shows the current pattern. The elevator bar at the right side of the list box is used to scroll through the list of files.



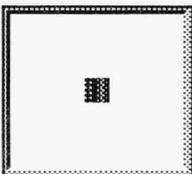
### File Type Box

The File Type box displays a listing of the extensions for types of files you can load as patterns. When you select the extension, the list box displays the files with that extension. The elevator bar at the right side of the file type box is used to scroll through the list of extensions.



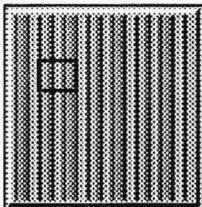
### Editing Box

The editing box beneath the Inkdrop, Current Color, and Move icons allows you to apply color to the pattern on a pixel-by-pixel basis. You can also move the pattern around in the box.



### Preview Box

The preview box on the far right side of the menu shows how the pattern will appear when you paint it on the canvas. The preview box has an edit area rectangle you can move around to show enlarged portions of the pattern in the editing box. To move the edit area rectangle in the preview box, select the Move icon, select the rectangle, move the mouse to position the rectangle on the portion of the pattern you want to edit, and press Cancel (you can also press Select). The ratio you select determines the size of the edit area rectangle. The pattern changes in the preview box as you make changes in the editing box.



### Size

The Size buttons display the X and Y dimensions (size in pixels) of the current pattern.



A rectangular button with a halftone background and a black border, containing the text 'Set Org.' in a bold, sans-serif font.**Set Org.****Set Origin**

The Set Org. (Set Origin) button allows you to set the origin for your pattern.

A rectangular button with a halftone background and a black border, containing the text 'HideBlk' in a bold, sans-serif font.**HideBlk****Hide Black**

Hide Blk (Hide Black) makes black (0,0,0) the transparent color.

A rectangular button with a halftone background and a black border, containing the text 'Register' in a bold, sans-serif font.**Register****Register**

The Register button gives the pattern a wallpaper effect (keeps the pattern recognizable or "in register") rather than smearing the pattern colors on the canvas when you paint.



## **PATTERN EDITOR HINTS AND COMBINATIONS**

The Pattern Editor menu allows you to paint with textures. You can choose textures from a library or you can create your own. The textures that look the best in your image may be the ones that are already in your image. The Clip Rectangle or Clip Polygon buttons in the Pattern Editor menu let you create patterns as you edit an image. Patterns clipped from the image will most likely have the correct colors and lighting to match the rest of the image.

When you use an image as a pattern, you can create the effect of peeling away the foreground to reveal the background. The foreground is the image that is on the screen, while the background is the image that is loaded into the Pattern Editor.

Combining Pattern with Airbrush produces an interesting blending effect. Also, combining Pattern with Tint or Wash lets you paint areas to blend the pattern and colors of the image. This creates a ghost-like or wispy effect on the image.

The time TEMPRA PRO needs to load and paint with a pattern depends on the amount of memory available in your computer and the size of the pattern. A large pattern operates much more slowly than a small pattern. You don't need to load a large pattern to create a textured effect. Grass or shrubbery can be simulated with patterns of 20 by 20 pixels. It may be better to create small samples of textures rather than large ones to paint more quickly.

Use the Register option in the Pattern Editor to create a "wallpaper" effect in your pattern. Or, to "smear" the colors in the pattern, turn off the Register option.



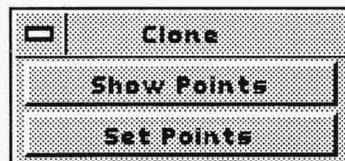
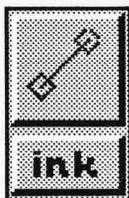
## **PATTERN EDITOR TUTORIAL**

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1. Select the INK functions push-button from the Main Menu Bar to open the Ink drop-down menu. Select Pattern from the drop-down menu. The Pattern Editor menu appears.
2. Select the GEO functions push-button from the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Activate Filled and Corners on the Rectangle menu.
3. Press Cancel on the mouse to remove the Main Menu Bar from the screen.
4. Move to any location on the canvas and press Select to position the upper right corner of your rectangle. Move the mouse and a ghost rectangle appears.
5. Move the mouse until the rectangle fills a quarter of the screen.
6. Press Select and the rectangle fills with the default pattern.
7. Press Cancel to return to the Main Menu Bar.

## CLONE

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Clone lets you pick up paint from one portion of an image and place it on another part of the screen. For instance, you can take the texture from one part of your image and move it to other parts. Clone works as if the portion being painted comes from an adjacent area.

Clone has only two options — Show Points and Set Points. You can set new clone points whenever you want. Clone is often used in retouching photorealistic images for covering up skin blemishes or for filling in an area where a clipping has been removed. Clone is applied using any of the Geometry or Airbrush functions.

To understand the Clone function, it may be useful to think of your original image as having an imaginary duplicate image lying under it. When you select Set Points and stretch a line from some point on the original image to a “destination” point elsewhere on the screen, it’s as if you were sliding the imaginary duplicate image over on the screen to the destination point. Then, when you paint over the destination point, you “reveal” the duplicate image area in its new position.

When you paint with Freehand using Clone, a line appears between the paint source and destination and stays on the screen. With other Geometry functions, the line appears only when you start painting. After you draw the first line on the screen (as in a polygon), the line connecting the source and destination disappears.

If Clone is active, you can choose a new source and destination without going back to the Clone menu by pressing the “C” button on the keyboard. Set your source and destination points as you would with the Set Points option in the Clone menu.



## CLONE CONTROLS

### Show Points

#### Show Points

The Show Points button displays the current location of the source and destination points. The source point has the letters SRC under it. The destination point has the letters DEST under it. Between the two points is a line with an arrow indicating the direction of the paint flow. The distance and direction of the two points remains constant as you paint.

### Set Points

#### Set Points

The Set Points button sets the source and destination points for painting. You select the source first (marked SRC) and the destination second (marked DEST). Clone uses the relationship between the distance and direction to find paint so you can pick up the paint from the source and place it on the destination. In order for you to paint, Clone needs a place on the screen for a source. (You cannot set your source on an area of the canvas that is off-screen.) If your canvas is larger than your screen display size, you won't be able to select a destination point that's outside of your current screen. However, depending on the size of the area you clone, you may be able to move to an adjacent section of your canvas and continue painting with the cloned area.



## **CLONE HINTS AND COMBINATIONS**

Clone is a handy retouching function for small areas of an image that need repair. If you have an old image with creases and empty spots, Clone lets you pick up paint of the same color and brightness from one part of the image and place the paint on adjacent parts.

Clone works best when transferring paint and textures short distances. This way, the color and brightness of the original image area is duplicated in locations where they match the original.

Clone is usually best applied using the Freehand function since Freehand offers the greatest control.

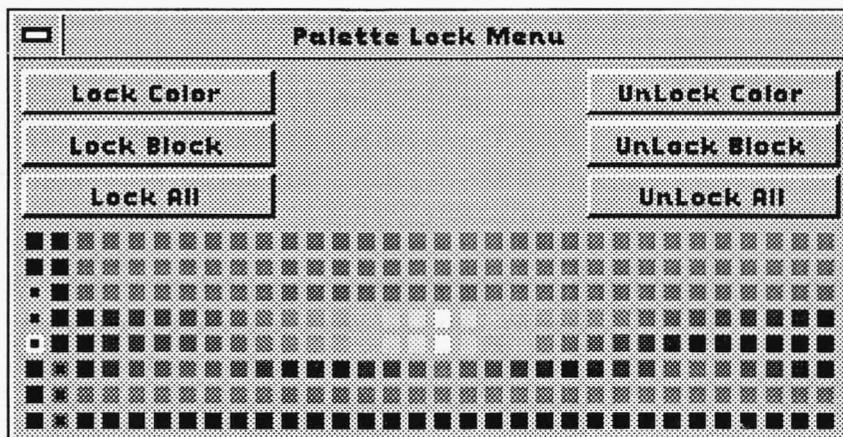
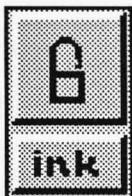


## CLONE TUTORIAL

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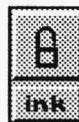
1. Load an image onto your canvas.
2. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Freehand from the drop-down menu. Activate the Repeat option on the Draw Freehand menu.
3. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Clone from the drop-down menu. Select the Set Points button. The menus disappear from the screen and a Pick icon appears with the letters SRC.
4. Select the point on your image from where you want to pick up paint (the source point). The source point is marked with a cross and a ghost line is stretched when you move the mouse.
5. Select the point on your image where you want the paint from the source to be deposited (the destination point). The menus return to the screen.
6. Select the Show Points button on the Clone menu. The menus disappear from the screen and the two points you selected are displayed with a line between them. The source of paint has the letters SRC under it, and the destination has the letters DEST under it.
7. Press Cancel to return to the Main Menu Bar and Clone menu. Press Cancel again to start using Clone.
8. Move the cursor to the destination point, press Select and hold it down, and move your mouse. As you paint with Clone, the paint is picked up from the source point and placed on the destination point.

## PALETTE LOCK



The Palette Lock menu allows you to lock or freeze colors on the palette. A locked color cannot be changed on the palette. Processes that will change the palette include spreading colors, loading clippings, or scanning. Palette Lock is different from Color Protect. When a color is locked, it may still be painted over on the canvas.

The first 16 colors (the first two columns) in the palette are the colors used by TEMPRA PRO for menus. These colors are automatically locked when you press function key F4, if the menu colors actually have to be restored. (If the first 16 colors are already the default menu colors when you press F4, the colors aren't automatically locked.) Palette lock is not used with display boards that display 16-bit (32,000) or 24-bit (16,000,000) color.



## PALETTE LOCK CONTROLS

### Lock Color

The Lock Color button is a rectangular icon with a dotted background and the text "Lock Color" in the center.

The Lock Color button allows you to lock individual colors. When the Lock Color button is pressed, you may select individual colors from the palette on the Palette Lock menu. The cursor becomes a Pick icon when Lock Color is selected. To lock a color, move the Pick icon to a color on the palette and press Select. When a color is locked, the color on the palette has a dot placed in the center of it. Press Cancel to stop locking colors.

### Lock Block

The Lock Block button is a rectangular icon with a dotted background and the text "Lock Block" in the center.

The Lock Block button locks a set or range of colors. To lock a range of colors, select the Lock Block button and move to the upper left color at the start of the block. Press Select and move to the bottom right of the block and press Select again. The entire set of colors is then blocked. The Lock Block button must be selected each time you want to lock a new block of colors.

### Lock All

The Lock All button is a rectangular icon with a dotted background and the text "Lock All" in the center.

The Lock All button locks all the colors on the palette.

### UnLock Color

The UnLock Color button is a rectangular icon with a dotted background and the text "UnLock Color" in the center.

The UnLock Color button performs the reverse of the Lock Color button. A locked color can be unlocked with the UnLock Color button. The cursor become a Pick icon when UnLock Color is selected. Move the Pick icon to a locked color on the palette and press Select. Press Cancel to stop unlocking colors.

### UnLock Block

The UnLock Block button is a rectangular icon with a dotted background and the text "UnLock Block" in the center.

The UnLock Block button works in the same manner as the Lock Block button but has the opposite effect. The UnLock Block button allows you to select a block of locked colors and unlock them.

### UnLock All

The UnLock All button is a rectangular icon with a dotted background and the text "UnLock All" in the center.

The UnLock All button removes locks from all the colors on the palette. When the UnLock All button is selected, all locked colors in the palette are unlocked.



## PALETTE LOCK HINTS AND COMBINATIONS

Palette Lock serves a different purpose than Color Protect. Color Protect is one of the Edit functions and prevents you from editing certain colors in your image. Palette Lock prevents you from modifying protected colors on your palette. You can still paint over a protected color in an *image*. You just can't change that protected color on the *palette*.

Palette Lock is useful when you've created a set of standard colors you want in every image you paint. Some presentation packages require a certain group of colors to be set aside. You will want to lock those colors so they are always available. When you load clippings, the colors on your palette change to show the original colors in the clipping and keep the protected colors available for use.

Palette Lock is only useful for VGA and other 8-bit (256-color) displays. Displays that use 16 bits (32,000 colors) or 24 bits (16 million colors) don't need Palette Lock. They don't need to limit color manipulation when you scan or import a clipping or image. Because of this, Palette Lock isn't available on displays with more than 256 colors.

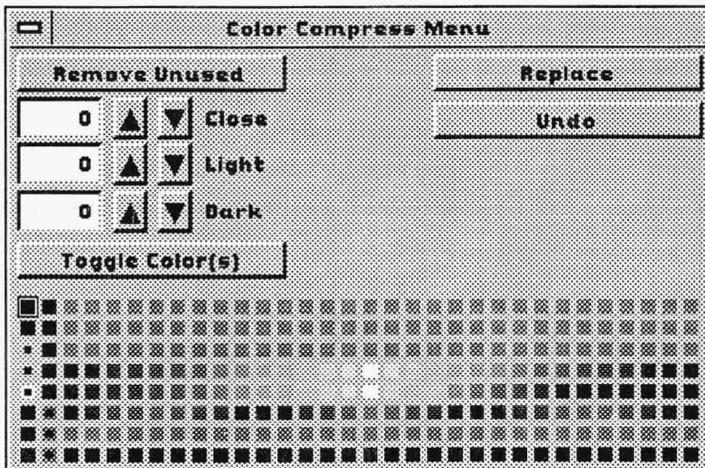
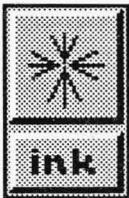


## PALETTE LOCK TUTORIAL

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1. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. The Ink Color menu appears. Be certain the current palette is the default palette. (The display box shows which palette is currently in use. Select the pull-down menu button to access the Palette Disk menu if you need to load the default palette.)
2. The drop-down menu is still visible behind the Ink Color menu. Select Palette from the drop-down menu. The Palette Lock menu appears on the screen.
3. Select Lock Block from the Palette Lock menu and move to a color in the middle of the palette. Press Select and a left bracket appears on that color.
4. Move down two rows and to the right of the palette and select another color. All the colors between the first color selected and the last color selected have a dot in the center of the color to indicate that they are locked.
5. The drop-down menu is still visible behind the Palette Lock menu. Select the Color function. The Ink Color menu appears on the screen. Select Spread on the Ink Color menu.
6. Select the top left color on the first row of the palette (*not* one of the menu colors) and then the bottom right color. The entire palette spreads between those colors. The colors that were locked are not changed.

## COLOR COMPRESS



The Color Compress menu helps you manage the colors on the palette and in your image. Color Compress only works on displays that use 8 bits of color per pixel (256 colors). It doesn't work on display boards using 16 or 24 bits per pixel. When the palette is compressed, TEMPRA PRO removes colors from the palette and substitutes black for the removed colors. You then use the parts of the palette with black to create new colors or to add colors when you paste a clipping onto the screen.

Color Compress can remove colors that are not used on the screen. You can also remove colors that are used, but are very similar in appearance to the colors on the palette. You can select individual colors for removal. The colors on the screen that are removed are replaced with similar colors chosen by the program. TEMPRA PRO attempts to maintain the image's appearance when compressing the palette. When TEMPRA PRO is compressing the palette, it looks at all the colors on the canvas. This prevents a change of colors that are not visible on the screen.



## COLOR COMPRESS CONTROLS

### Remove Unused



The Remove Unused button marks all the colors on the current canvas that are not used in the current image. The colors that are not used in the image are marked on the palette with a dot in the center of the color square.

### Close



The Close fine-tuning button lets you to choose colors for removal from the canvas that are close to each other in appearance. TEMPRA PRO substitutes one color for another when they are replaced. The range for the Close fine-tuning button is 0 to 128. "Close" refers to the distance between colors in Hue.

### Light



The Light fine-tuning button lets you choose colors for removal that are close to each other in appearance and are light in color. When colors have been selected using the Light fine-tuning button, TEMPRA PRO attempts to replace. The range for the Light fine-tuning button is 0 to 128.

### Dark



The Dark fine-tuning button lets you choose the colors for removal that are close to each other in appearance and are dark in color. When colors have been selected using the Dark fine-tuning button, TEMPRA PRO attempts to replace them without changing the appearance of the image. The range for the Dark fine-tuning button is 0 to 128.

### Toggle Color(s)



The Toggle Color(s) button allows you to select individual colors to be replaced. When you select Toggle Color(s), the cursor becomes a Pick icon. You can then select individual colors to be replaced. The selected colors are replaced with similar colors.



## Replace



The Replace button performs the replacement on the colors that have been marked by the Close, Light, or Dark fine-tuning buttons and the Toggle Colors button. When you select Replace, the colors that have been marked on the palette are replaced with colors that are similar in appearance. The substitution of colors happens for those colors that are used on the canvas. If the color is not used on the canvas, the color is removed from the palette. Colors that are removed from the palette are replaced with the color black.

## Undo



The Undo button reverses the replacement and palette compression done by the Replace button. Undo is effective until the Palette Compress menu is removed from the screen. The TEMPRA PRO Undo button on the Main Menu Bar will not undo palette compression.

## **COLOR COMPRESS HINTS AND COMBINATIONS** ---

Compressing the palette places black in the colors that were removed, while keeping the original image intact. You can use the black colors to create your own custom colors. Use the Color Spread function to create ranges of color that meet your needs.

If you compress the palette before you load a clipping, you will make room for the colors in the clipping to be placed into the palette. This gives 256-color displays the capabilities available to 16- and 24-bit displays.

Combine Palette Lock with Palette Compress to make sure that only the colors in your image are on the palette and that the colors won't change when you add a clipping to your image. Experiment with compressing the palette and locking the colors in your image.

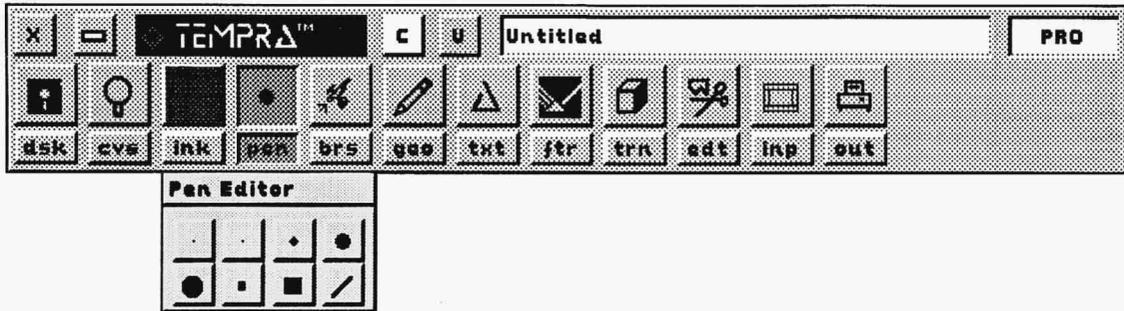


## **COLOR COMPRESS TUTORIAL**

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1. Load an image onto the canvas.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Compress from the drop-down menu. The Color Compress menu appears.
3. Move to the Close fine-tuning button. Select the up arrow. The numbers in the fine-tuning box increase from 0 in increments of 1 each time you press Select. Continue pressing Select until you see colors on the palette appear with dots in the middle of them. These are the colors that will be replaced.
4. Move to the Replace button and press Select. The screen clears and the image returns with some of the colors replaced.
5. The Color Compress menu has a palette with fewer colors and the removed colors replaced with black. The new black colors are at the end of the palette.

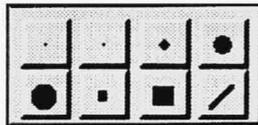
# Pen Functions



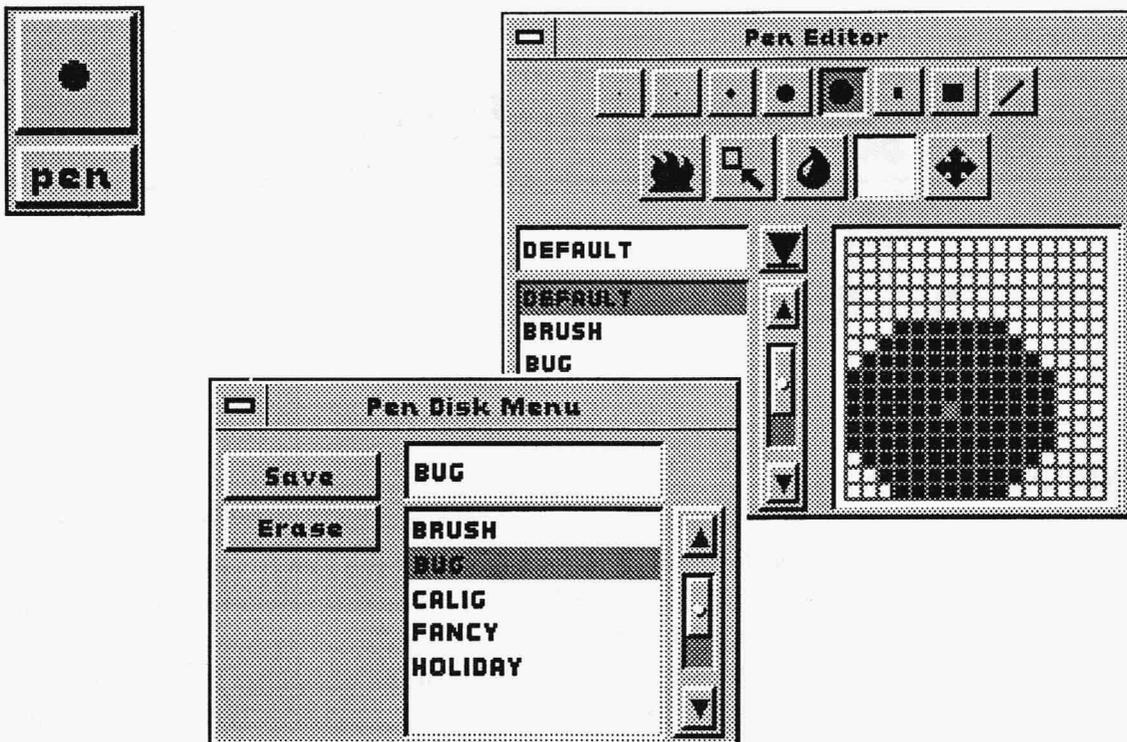
## INTRODUCTION

Two very different functions make up the Pen functions group: Fill and the Pen Editor. The Pen functions drop-down menu is a little different from other drop-down menus, because you can select a pen right from the drop-down menu. You can also select the Pen Editor to create your own pens. Many effects in TEMPRA PRO don't require Pen functions to be active. Pens are used mainly with the Geometry functions. In fact, TEMPRA PRO automatically activates the Pen and Geometry functions when you select one of the two. If you select a pen from the Pen drop-down menu, the current Geometry function becomes active. If you select Geometry, the current Pen becomes active. TEMPRA PRO only activates Geometry when you select a pen or the Pen Editor. Geometry is deactivated when you select Fill.

Remember, you can select a pen right from the Pen functions drop-down menu. Selecting one of the pen icons from the drop-down menu makes it the current pen.

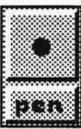


## PEN EDITOR



Although TEMpra PRO provides a selection of eight pens for painting, you can create your own pens using the Pen Editor. TEMpra PRO's pens are stored in a file called "Default." As you create and edit pens, you can save them in separate files. Each file has a maximum of eight pens. You can save as many files as you want to hold the various pens you design.

You access the Pen Editor menu by selecting either Pen Editor on the Pen functions drop-down menu or the current Pen icon. You can perform four activities in the Pen Editor: create or edit pens, load pens, save pens, and erase pens. You create (or edit) and load pens in the Pen Editor menu itself. You save and erase pens in the Pen Editor pull-down menu, called the Pen Disk menu.

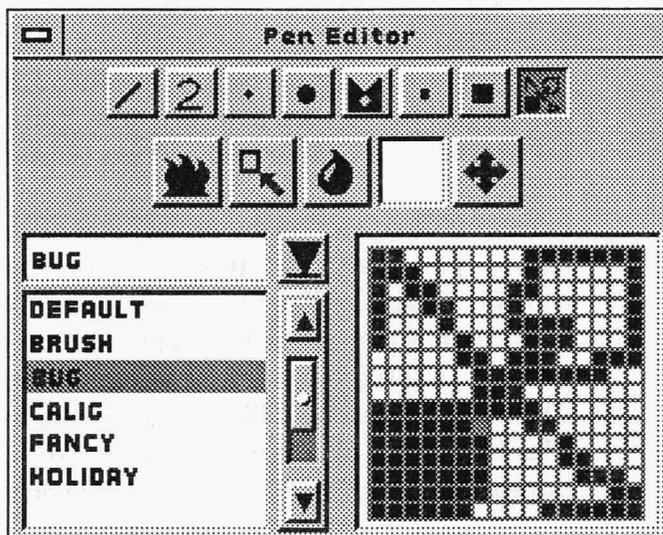


To create a new pen in the Pen Editor, load a file of pens by selecting a file from the list box ("Default" is the only one available until you start saving your own files). Select one of the pen icons across the top of the Pen Editor menu. The pen you select appears on the editing grid, the Main Menu Bar, and the drop-down menu, if it is open. Use the editing grid to edit the pen one pixel at a time. You can either edit the existing pen or clear the editing grid and start from scratch.

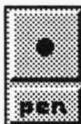
After you've created a new pen or set of pens, you need to save to a file. To save your pens, select the pull-down menu button (the underlined arrow) to open the Pen Disk menu. Select the filename box at the top of the list box in the Pen Disk menu. The box changes color. Type in the name of your file for your new set of pens and press Enter. Select Save. The name of your new file appears in the list box. You can also erase files in the pull-down menu. Before you can erase, a message box appears to confirm deletion of the file you have selected.

After you've finished saving or erasing pen files, press either Cancel or the Remove Menu button to return to the Pen Editor menu.

## PEN EDITOR EXAMPLE



Above is a sample pen that has been edited on the grid. The "Bug" pen file is currently loaded and is named in the filename box and highlighted in the list box. Other pens created and saved in the "Bug" file are shown in the row of pen icons across the top of the Pen Editor menu.



## PEN EDITOR CONTROLS

### Pens



The Pen icons display the various pens available in the current pen file. Selecting one of these icons places that pen in the Pen Editor grid. The changes made to the pen in the grid are reflected in the appropriate Pen icon.

### Hot



The Hot icon sets the drawing point for your pen. Most of the pixels representing the enlarged pen shape on the grid are black. The pink, or "hot," pixel is the drawing point of your pen. To change the pen's drawing point, select the Hot icon. The cursor changes to a Set icon. Move the Set icon to the pixel on the grid where you want the new drawing point to be and press Select. That pixel turns pink and becomes the new drawing point.

### Copy



The Copy icon copies the current pen to another location in the row of Pen icons. Select the pen you want to copy from the row of icons across the top of the Pen Editor menu. Select the Copy icon. Select another pen icon to paste the copy onto. The pen appears twice on the pen row.

### Teardrop

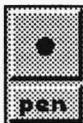


The Teardrop icon fills the entire Pen Editor grid with the current pen editing color (black or white). This is particularly useful for creating new pens from scratch, because it clears the grid. A white grid gives you a "clean slate" to work from, while a black grid gives you a 16 by 16 pixel square pen. You can then add or erase pixels to create your pen.

### Current Color



The Current Color icon determines whether you draw or erase a pixel. The current color can only be black or white. Black is for drawing and white is for erasing. Selecting the icon when it is white turns it black, and selecting the icon when it is black turns it white.



### Arrow

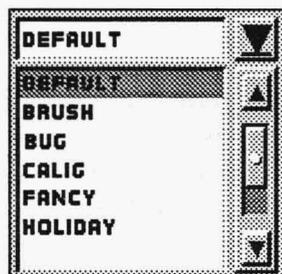
The Arrow icon moves the entire pen up, down, right, and left on the grid. To move the pen one pixel at a time, press and release the arrow pointing in the direction you want to move the pen. For unrestricted movement of the pen, select the Arrow icon and hold the Select button on the mouse while moving the mouse around. The pen moves around on the grid. If you move part of the pen off the grid, the pen “wraps around,” and that part of the pen reappears on the opposite side of the grid.



### Pull-down Menu Button

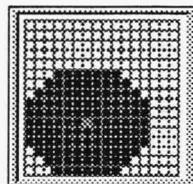
The Pen Editor pull-down menu button is the underlined arrow to the right of the filename box. Selecting this button accesses the Pen Disk menu.

### List Box



The Pen Editor list box contains an alphabetical list of pen files that you have created and saved. You can select a file from the list box to load either for editing or for painting. The file you select is highlighted in the list box and displayed as the current file in the filename box above the list box. All the pens available in the current file are displayed across the top of the Pen Editor menu and in the Pen functions drop-down menu.

### Grid



The Pen Editor grid is your editing area for creating or editing pens. The grid is a 16 x 16 pixel square. Edit a pen by placing black or white pixels in the grid squares. Place the pixels by moving the cursor to the grid and pressing Select.



## Pen Disk Menu List Box



The Pen Disk menu, which is the Pen Editor pull-down menu, also has a list box with a filename box above it. The file displayed in the filename box is the file you will either save or erase. You can either select the filename box and type a new name for your file or select a file from the list box to be saved or erased. The list box displays only pen files.



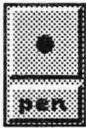
### Pen Disk Menu - Save

The Save button in the Pen Disk menu allows you to store the pens you have created in a file. Whenever you save a pen file in TEMPRA PRO all eight pens are saved, even if all of the pens weren't changed. TEMPRA PRO saves your edited pen files to disk and gives them a file extension of .PEN.



### Pen Disk Menu - Erase

The Erase button in the Pen Disk menu allows you to delete pen files. You cannot delete the Default pen file. Before you erase, a message box appears to confirm the deletion.



## **PEN EDITOR HINTS AND COMBINATIONS**

If you use the single-pixel pen to paint, you may not be able to locate it on the canvas right away. Use Zoom to edit one pixel at a time.

You can create pens in any shape on the grid, such as a football or a smiley face, for instance. You can use the pen to create small, easily proportioned icons for charts and graphs.

You can edit pens and use them just in your current TEMPRA PRO session without saving the pen file to disk. However, remember to save your edited pen file before you exit TEMPRA PRO if you wish to use those pens in the future.

**BUZZ  
SAYS**



*Make a number of pen sets. You will find different uses for different pens. Buzz uses angled lines for calligraphy and pens that look like miniature symbols for illustrations.*

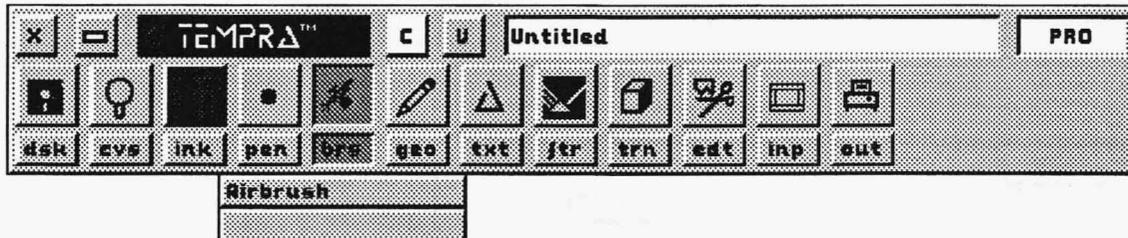


## PEN EDITOR TUTORIAL

1. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select Pen Editor.
2. Select the diagonal slash pen icon from the row of icons at the top of the Pen Editor menu. The diagonal slash pen appears on the editing grid, Pen Editor menu, Main Menu Bar, and drop-down menu.
3. Make sure the Current Color icon is white. Select the Teardrop icon. The previous pen disappears and the entire grid becomes white.
4. Select the Current Color icon to make it black.
5. Select various pixels on the editing grid to create a pen. Note that as you place the pixels on the grid, the changes are also reflected wherever the pen is displayed on the menus.
6. Select the Hot icon to set your drawing point. Select a pixel in the center of the pen. The pixel turns pink.
7. After you've finished creating the pen, select the pull-down menu button (underlined arrow) to open the Pen Disk menu.
8. Select the filename box in the Pen Disk menu, type a name for your pen file, and press Enter. Then select the Save button to save the pen file. The new file appears in the list box.
9. Press Cancel or select the Remove Menu button on the Pen Disk menu to return to the Pen Editor menu. The file you just saved is displayed in the list box and the filename box.
10. Edit other pens in your new pen file. When you're finished, you can erase the file. You can edit the pens in your current pen file as often as you like before saving; you don't have to **save** the pen file after editing each individual pen. However, **you must** save the pen file before you exit for those pens to be available **in** future sessions.

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# Brush Functions

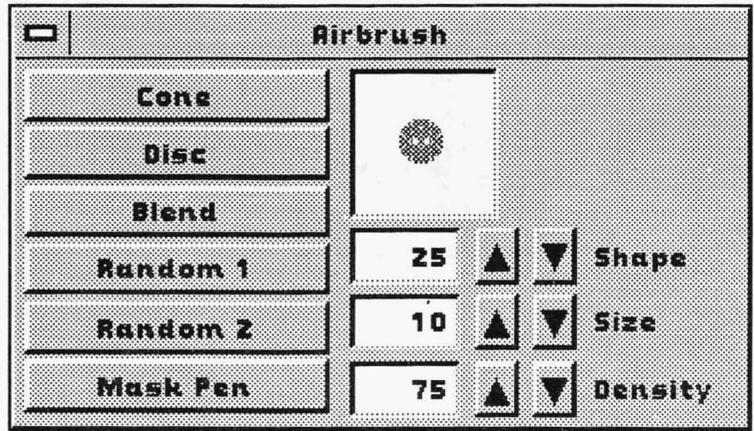


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## INTRODUCTION

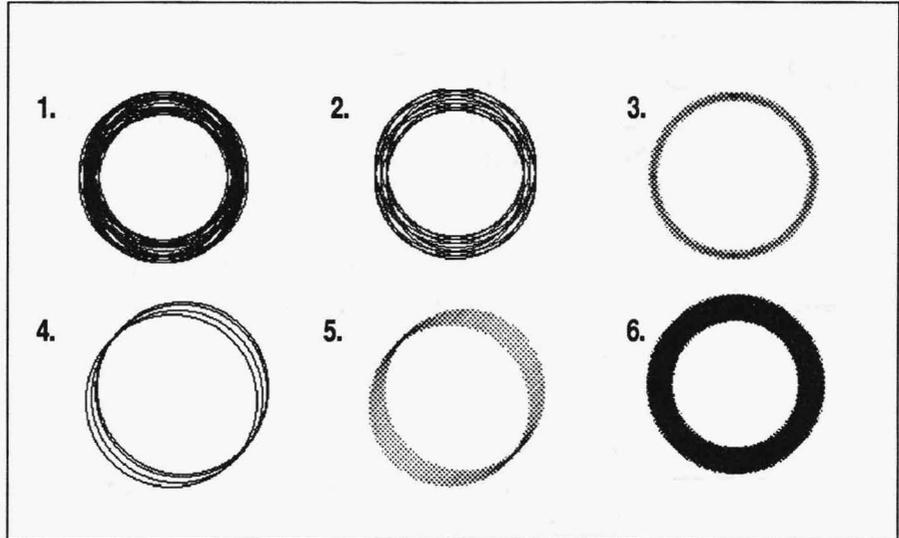
Brush functions contain only one function: Airbrush. Airbrush is a computer representation of an actual airbrush, in which the ink “sprays” through the brush onto the canvas. You can enhance this effect even further by combining Brush with patterns, color spreads, and filters. You apply Airbrush to the canvas using the Geometry functions. Airbrush also has a control so you can use a pen to give the airbrushing a distinctive pen shape. Because Airbrush is the only Brush function currently available, you can always open the Airbrush menu by selecting the Brush functions icon. This provides quicker access than selecting the push-button and opening the drop-down menu. Airbrush effects can range anywhere from a “spray paint” look to an almost solid appearance.

## AIRBRUSH



The Airbrush menu provides controls for adjusting the airbrush. As you activate various controls, the preview box displays the effect you will get. Because Airbrush simulates ink spraying from a brush, it is most effective with the Freehand tool in Geometry functions. Using Freehand with only Repeat active gives a “spray paint” effect. With both Repeat and Connected active in Freehand, Airbrush has an almost solid appearance, except around the edges. When you use Freehand, the cursor is replaced by a dot in the middle of a dashed circle, unless Mask Pen is active. The size of the airbrush determines the size of the circle. All the other Geometry functions use the regular pointer cursor. Airbrush works only with outlined Geometry shapes.

You can use the keyboard while painting with Airbrush to make adjustments without going back to the menus. The “A” key brings up the Airbrush menu. The “S” key lets you change the size of the airbrush as you paint and the “D” key lets you adjust the density. The Up and Right arrow keys increase the size and density of the brush, and the Down and Left arrow keys decrease the size and density. The Page Up key increases the brush to its largest size and density, and the Page Down key makes the brush its smallest size and density. On most keyboards, you can use either the cursor move keys or the numeric keypad. Be sure to turn off the Num Lock (Number Lock) toggle.

**AIRBRUSH EXAMPLES**

Airbrush drawings using the Circle function. Size and Density were both set at 10.

1. Disc and Random 1 active.
2. Cone and Random 1 active.
3. Cone and Blend active.
4. Disc, Random 1, and Mask Pen active, using the slanted pen in the Pen functions drop-down menu.
5. Disc, Blend, and Mask Pen active, using the slanted pen in the Pen functions drop-down menu.
6. Disc and Blend active.



## AIRBRUSH CONTROLS

### Cone



Cone is a preset Airbrush pattern that is automatically active when the Shape fine-tuning button is set at 25. Cone becomes inactive when the Shape value is any other number. If you select Cone, the Shape value is automatically set at 25.

### Disc



Disc is a preset Airbrush pattern that is active when the Shape fine-tuning button is set at 50. Disc becomes inactive when the Shape value is any other number. If you select Disc, the Shape value is automatically set at 50.

### Blend



Blend is a preset Airbrush pattern that combines the spraying paint with the colors on the canvas. You can use Blend with Cone or Disc, or when Shape is set at a number other than 25 or 50.

### Random 1



Random 1 is a preset Airbrush pattern. It's roughly circular, but the appearance of an Airbrush using Random 1 may be altered by changing the Shape, Size, and Density settings. Random 1 can be combined with either Cone or Disc and with Mask Pen.

### Random 2



Random 2 is a preset Airbrush pattern that is like a spatter of paint. As with Random 1, changing the Shape, Size, and Density settings influences the appearance of a Random 2 Airbrush. Random 2 can be combined with either Cone or Disc and with Mask Pen.

### Mask Pen



Mask Pen uses the current pen as your Airbrush. Mask Pen may be combined with either Cone or Disc, and with either Blend, Random 1, or Random 2. The Shape, Size, and Density settings determine how closely a Mask Pen resembles the current pen.



## Shape



The Shape fine-tuning button lets you adjust the shape of your Airbrush. Shape ranges from -50 (a ring or doughnut shape) to 50 (the Disc shape).

## Size



The Size fine-tuning button lets you adjust the size (radius) of your Airbrush. Size ranges from 1 (a single pixel) to 25 (a large circle).

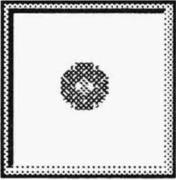
## Density



The Density fine-tuning button lets you adjust the density of your Airbrush. Density ranges from 1 (a very sparse dot pattern) to 100 (a heavy dot pattern).

## Preview Box

The Airbrush preview box displays the changes to Airbrush as you activate various controls.





## AIRBRUSH HINTS AND COMBINATIONS

You can control the amount of paint you apply to the canvas using Airbrush. The amount can range from a subtle effect to one so strong it looks like a solid color. When Freehand is used to apply the paint, the amount of paint applied depends not only on the Airbrush settings, but also on how you move the mouse while pressing Select. Experiment with various Airbrush settings to achieve the right look in individual paintings.

In Freehand with only Repeat active, the current color is airbrushed onto the canvas as you paint. In Freehand with Repeat and Connected active, your cursor may outrun the computer's application of paint. Airbrush may also slow the paint process when it is combined with other functions, such as Pattern, Color Spread, or Filters.

### BUZZ SAYS



*You can use Airbrush and the Wash filter to create a waterpaint effect. Set the Wash filter strength to 50 and set Airbrush to blend. Start with a white background. The paint flows and blends as you paint with Freehand (with Connected active). To lighten the colors you paint, use white as your color.*



## AIRBRUSH TUTORIAL

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1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Freehand from the drop-down menu. On the Draw Freehand menu, activate the Repeat control only.
2. Select the BRS functions icon on the Main Menu Bar to open the Airbrush menu. Activate Cone on the Airbrush menu. The Shape fine-tuning button changes to 25. Active the Disc control. Shape changes to 50. Leave Disc active. Activate Random 1 also. Adjust Size to 25 either by selecting the fine-tuning box, typing in 25, and pressing Enter, or by selecting the up-and-down arrows to the right of the box. Adjust the Density to 50.
3. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color from the palette in the Ink Color menu that is different from your background color.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. A dot with a dashed circle appears on your screen instead of the pointer cursor. Press and release the Select button. You will see a round airbrushed pattern. Press Select again, but this time hold down the Select button while you drag the mouse across the screen. The airbrushed pattern is painted as you move the mouse.
6. Press Cancel to return to the Main Menu Bar.
7. Select the GEO functions icon on the Main Menu Bar to open the Draw Freehand menu. Activate the Connected control.
8. Press Cancel on the mouse to clear the Main Menu Bar from the screen.



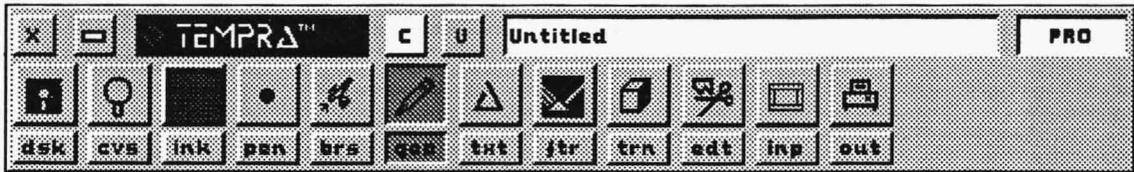
9. Press and hold the Select button while you drag the mouse across. The cursor will probably outrun the computer, so when you release the Select button, your cursor will be farther than the end of your airbrushed paint. Note that the appearance of this airbrushed Freehand painting is different than the one you made earlier.



10. Press Cancel to return to the Main Menu Bar.
11. Try other combinations using functions like Pattern and Color Spread and other Airbrush controls like Mask Pen. Also try adjusting the Shape, Size, and Density with the fine-tuning buttons.

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# Geometry Functions



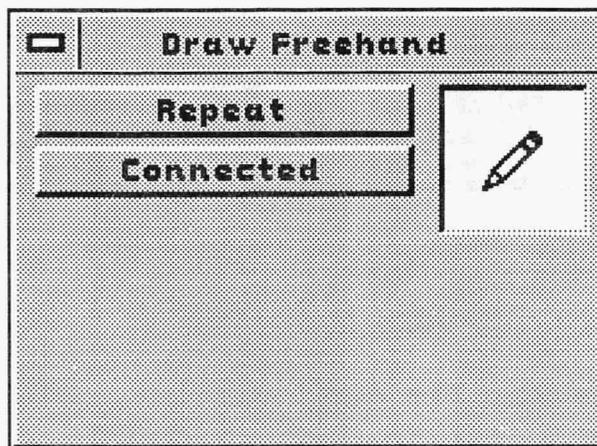
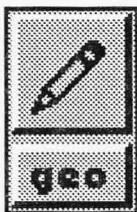
- Freshand
- Line
- Rectangle
- Square
- Parallelogram
- Circle
- Ellipse
- Arc
- Curve
- Spline
- Regular Poly
- Irregular Poly
- Fill
- Tempra Wand

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## INTRODUCTION

The Geometry functions menu contains TEMPra PRO's drawing functions. You will probably use this menu more than any other. Each function, or tool, provides a different way of painting onto your canvas. Additionally, each tool includes radio buttons for controlling how you use that tool to paint. A special feature is the Repeat button, which allows you to paint multiple geometric shapes when you press and hold Select on the mouse while moving the mouse around. You can create some interesting effects using this control.

## FREEHAND

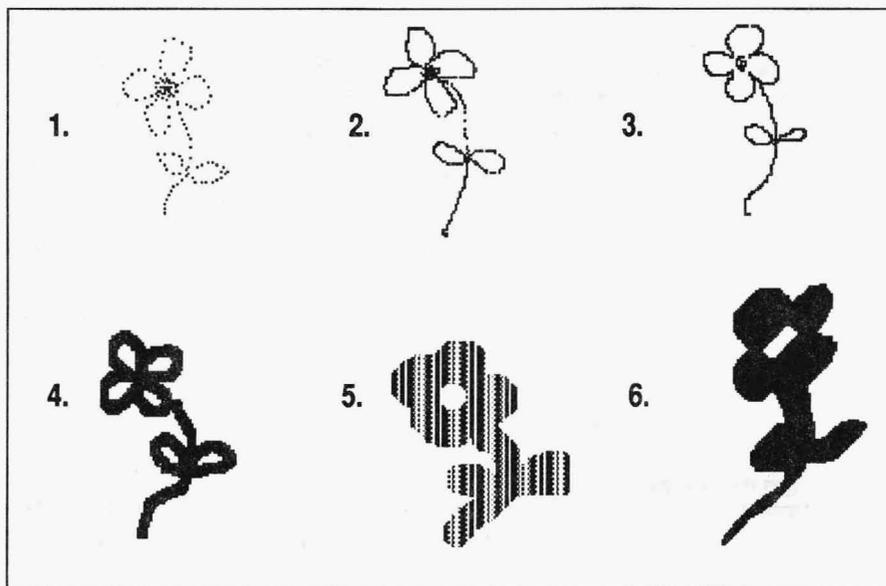


Selecting Freehand from the drop-down menu opens the Draw Freehand menu. Draw Freehand allows you to paint without any constraints. This function matches the way a painter applies paint to a canvas. Freehand can be combined with Filter or Airbrush to produce interesting effects. Whenever you use the Freehand function, you paint using either a pen or the airbrush. The Main Menu Bar displays your current icon.

Because Freehand has more flexibility and none of the constraints of the other Geometry functions, you may need to practice with the mouse when drawing lines and curves to create a smooth effect. If the effect you are trying to create requires evenly consistent or very specific lines or curves, you may want to use one of the other appropriate Geometry functions to make that shape. In addition, Freehand applies paint as you draw, unlike the other Geometry functions, which display a ghost frame of that shape before you paint it on the canvas.



## FREEHAND EXAMPLES



1. A Freehand drawing with no controls selected, using the single pixel pen.
2. A Freehand drawing with Repeat active, using the single pixel pen.
3. A Freehand drawing with Repeat and Connected active, using the single pixel pen.
4. A Freehand drawing with Repeat and Connected active, using the square pen.
5. A Freehand drawing with Repeat and Connected active, using a pattern and the large round pen.
6. A Freehand drawing with Repeat and Connected active, using the slanted pen.



## **FREEHAND CONTROLS**

### **Repeat**



**Repeat**

Repeat applies paint in a series of individual points or brush strokes. Each time you press the Select button, you apply a point or dot of paint to the canvas. To create a pattern or line, press and hold down the Select button as you drag the mouse across the canvas. The speed at which you move your mouse determines the proximity of the points or paint dots to one another. If you move the mouse quickly as you draw, the paint is placed in many separate points. If you move the mouse slowly, the paint has a solid appearance.

### **Connected**



**Connected**

Connected applies the paint in a continuous stream. Connected works only when Repeat is active and remains gray until you select Repeat. To draw with Repeat and Connected active, press and hold down the Select button as you drag the mouse across the canvas. The speed at which you move the mouse does not affect the paint's appearance — it will be a continuous stream whether you move your mouse slowly or quickly.



## FREEHAND HINTS AND COMBINATIONS

The type of computer you have and the speed at which you move your mouse determine how Freehand works. On some computers, activating only the Repeat button can produce the same effect as activating both Repeat and Connected — a solid stream of paint. Sometimes, with both buttons active, you can move the mouse faster than the computer can apply the paint to the canvas. This may cause you to lose your place on the canvas. With only Repeat active, your mouse moves at the same speed as the application of paint. You need to experiment with both options to determine which works best for you.

When a filter, airbrush, color spread, or pattern is active while you use Freehand, TEMPRA PRO takes longer to work. You should learn how fast these work on your computer. It is possible to outrun your computer while you are using Freehand; that is, you draw faster than the computer applies the paint.

Freehand can be used to erase painted areas of your canvas with precise control. Choose the background color as your current color and paint over the area you wish to erase.

If you paint in Freehand with both radio buttons off, apply paint by pressing and releasing Select in quick succession. Pressing and holding the Select button while moving the mouse with both Repeat and Connected inactive has no effect — you still only see an individual point or dot of paint.

Use the slanted pen that resembles a slash with Repeat or Repeat and Connected to create a calligraphy effect.

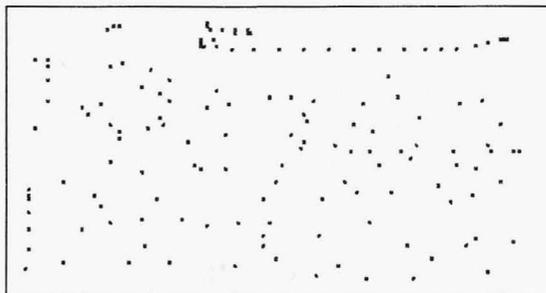
**BUZZ  
SAYS**



*All great painters sign their work. Using Freehand with a calligraphy pen is one way to sign your great paintings.*

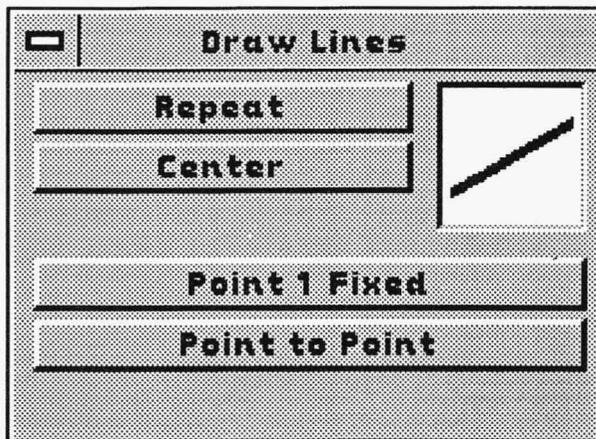
**FREEHAND TUTORIAL**

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Freehand from the drop-down menu. Turn off all buttons.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Press Select to begin applying paint to the canvas with Freehand. Release the button and you will see a dot of paint. Continue pressing and releasing to paint a series of dots on the canvas.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Repeat and Connected buttons in the Freehand menu.

## LINE



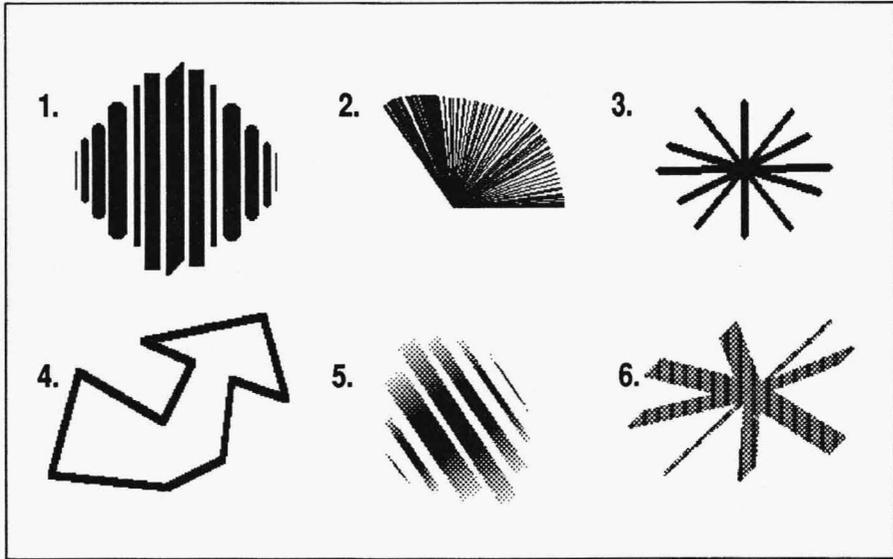
Selecting Lines on the drop-down menu opens the Draw Lines menu. Draw Lines allows you to draw straight lines in any direction. The simplicity of the Lines tool is deceptive; you can create numerous effects with Line, especially if you combine it with Filter, Airbrush, or Pattern.

Unlike Freehand, which paints as you draw, Line provides a ghost line so you can make sure your line is positioned correctly before painting it down.

Absolutely straight lines may be painted across or up and down the canvas as long as you make sure the ghost line has no steps or jags in it before painting down the line. Lines painted on an angle may look jagged, depending on which pen and screen resolution you use.



## LINE EXAMPLES



1. A Line drawing with no controls selected, using the various pens.
2. A Line drawing with Point 1 Fixed and Repeat active, using the single pixel pen.
3. A Line drawing with Point 1 Fixed and Center active, using the diamond pen.
4. A Line drawing with Point to Point active, using the single pixel pen.
5. A Line drawing with no controls selected, using color spread and various pens.
6. A Line drawing with Point 1 Fixed and Repeat active, using a pattern and the slanted pen. Notice the difference between this example and example 3, where the lines match exactly from the center point.



## LINE CONTROLS

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### Repeat

**Repeat**

Repeat works only when Point 1 Fixed is active. You can combine Repeat with Center, but only when Point 1 Fixed is active. Press and hold the Select button as you move the mouse to paint the lines on the canvas. Press Cancel to end that set of lines.

### Center

**Center**

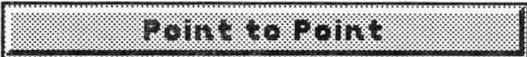
Center makes lines in any direction starting from a midpoint. After you select the midpoint, a line emerges from both sides of that point. Move the mouse to rotate and stretch the ghost line. Press Select when the line is the length you want.

### Point 1 Fixed

**Point 1 Fixed**

Point 1 Fixed draws lines in which the first point you select on the canvas is the starting point for all the lines you paint. Press Select to paint down each line. Press Cancel to end that set of lines.

### Point to Point

**Point to Point**

With Point to Point, the endpoint of your first line becomes the starting point of your next line. Press Select to paint down each line in the length and position you want. Press Cancel to end the set of lines.



## LINE HINTS AND COMBINATIONS

When you draw the line, you will see a ghost image of the line's location that stretches and retracts as you move the mouse. The line is painted down on the canvas when you press Select. If you want to make a straight line across the screen or up and down the screen, make sure the ghost image is perfectly straight. If the ghost line is jagged at all, the line will also be jagged.

You can create a fan effect using the Point 1 Fixed button or a wheel effect using the Center button. This is most effective with a small pen selected and Repeat active. If you use the animation effect in the Color Spread menu, the fans either pump color toward the center or rotate the color, depending on the animation you choose. Try setting the animation both ways with a wide range of colors in the spread.

The ghost line is the same size no matter which pen you have selected. If you use a larger or angled pen, take into account the space needed for the pen width as it will be wider than what the ghost line displays.

Simple up-and-down or left-and-right lines are generally smoother than diagonal or angled lines. The AntiAlias filter is useful for smoothing the jaggedness of diagonal lines. Painting lines with the AntiAlias filter active will blend the jagged edges of the lines with the background. The Soften filter may be used to blend the edges of already painted lines with the background.

If you stretch a ghost line and then decide it's not where you want it, simply cancel, reposition your cursor, press Select, and stretch a new ghost line.

**BUZZ  
SAYS**

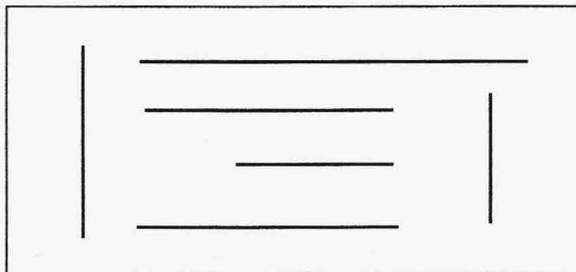


*Check the Hot point on your pen. That is where the ghost line forms. If the Hot point is at the top of your pen, the paint is applied with the pen shape under the ghost line.*



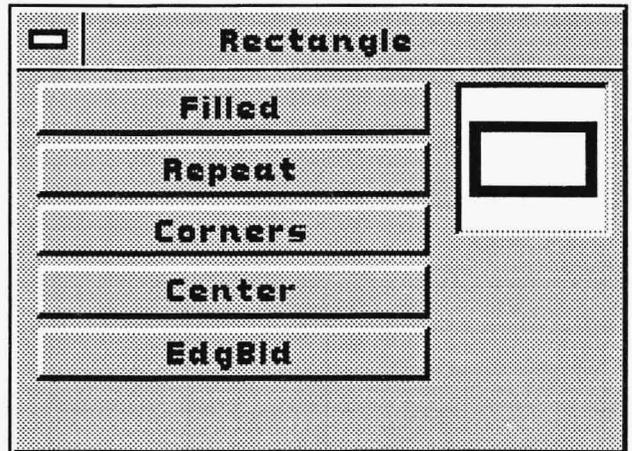
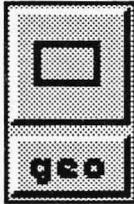
## LINE TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Line from the drop-down menu. Turn off all buttons on the Draw Lines menu.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Move the cursor to the desired starting point of your line and press Select. Stretch the ghost image to the desired length and press Select to paint down the line.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Repeat, Center, Point 1 Fixed, and Point to Point buttons in the Draw Lines menu.

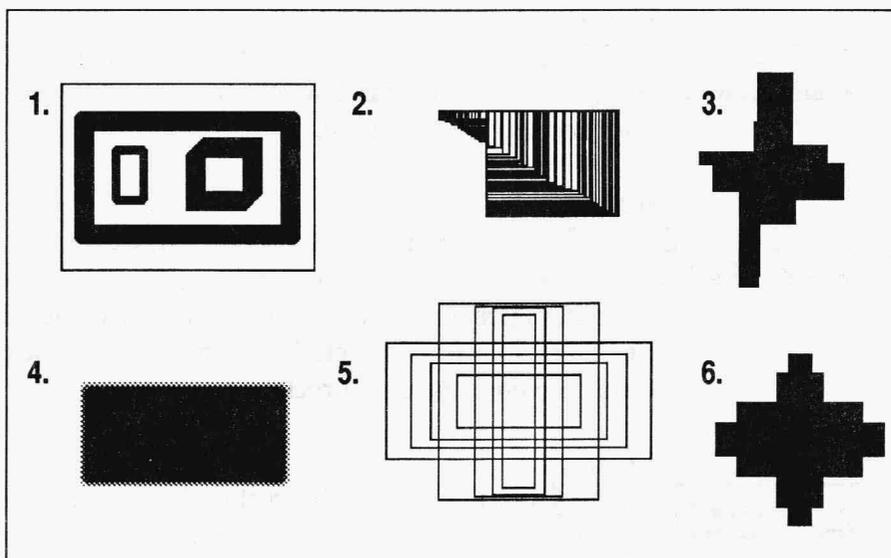
## RECTANGLE



The Rectangle function lets you paint filled or outlined rectangles using any of the pens. But because you can combine Rectangle with various effects, such as Pattern, you can create more than just a simple four-sided figure. As with Line, Rectangle shows a ghost frame before painting the rectangle. Unlike some of the other Geometry functions which can be used with none of the controls active, Rectangle must have either Corners or Center active to work.



## RECTANGLE EXAMPLES



1. A Rectangle drawing with Corners active, using various pens.
2. A Rectangle drawing with Corners and Repeat active, using the single pixel pen and moving the mouse in a circular motion.
3. A Rectangle drawing with Corners, Filled, and Repeat active, using the single pixel pen.
4. A Rectangle drawing with Corners, Filled, and Edge Blend active, using the single pixel pen.
5. A Rectangle drawing with Center and Repeat active, using the single pixel pen.
6. A Rectangle drawing with Center, Filled, and Repeat active, using the single pixel pen.



## RECTANGLE CONTROLS

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### Filled



When Filled is selected, your rectangle is completely filled with the current color or pattern. When Filled is inactive, your rectangle is outlined.

### Repeat



With Repeat active, holding down the Select button and moving the mouse will create a series of rectangles. Whether the rectangles are connected depends on what other buttons on the Rectangle menu are selected and how fast you move the mouse. Press Cancel to end that set of rectangles.

### Corners



Corners starts the rectangle at one corner. Press Select to choose the starting point, stretch the ghost frame, and then press Select again to paint down the rectangle.

### Center



Center begins from midpoint and moves outward. Press Select at your rectangle's midpoint, stretch the ghost frame in any direction, and press Select again to paint down the rectangle.

### EdgBld



Active only with Filled, Edge Blend blends the edge of filled rectangles with the colors on the canvas. This produces a softened border effect.



## RECTANGLE HINTS AND COMBINATIONS

Rectangle, like other Geometry functions, can be used to effectively erase parts of the screen. Make your current color the same as the background and select the Filled button in the Rectangle menu. Draw a rectangle over the painted areas you wish to erase.

The pen size or shape does not affect the edging of the rectangle when Filled is active; all filled rectangles have the same 90-degree angled corners. When Filled is inactive, the outlined rectangles reflect the selected pen's shape.

Activate Corners and Repeat in the Rectangle drop-down menu. Turn on Color Spread and set the type to Object. Make a pattern of rectangles using a color cycle of different colors. Try the same thing with Center instead of Corners.

If you stretch a ghost frame for a rectangle and then decide it's not where you want it, simply cancel, reposition your cursor, press Select, and stretch a new ghost frame.

**BUZZ  
SAYS**

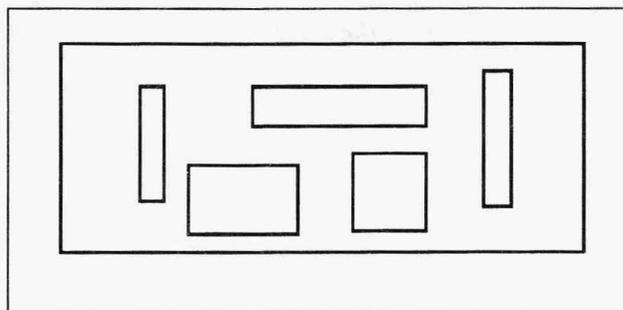


*Use filled rectangles to experiment with effects, such as Sharpen or Color Cycle. Watching TEMPRA PRO add the effects is almost as much fun as creating the effects.*



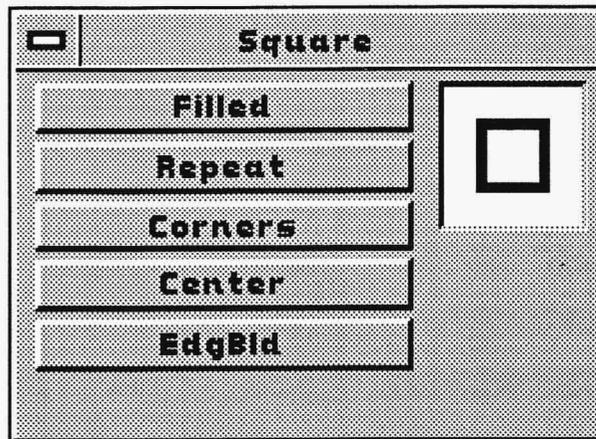
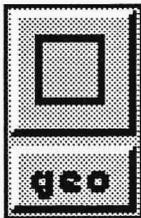
## RECTANGLE TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Activate Corners in the Rectangle menu and turn off the other buttons.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Move the cursor to the starting point for your rectangle and press Select. Move the mouse to stretch a ghost frame. When the ghost frame looks like the rectangle you want, press Select. The rectangle is painted down on the canvas.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Filled, Repeat, Center, and Edge Blend buttons in the Rectangle menu.

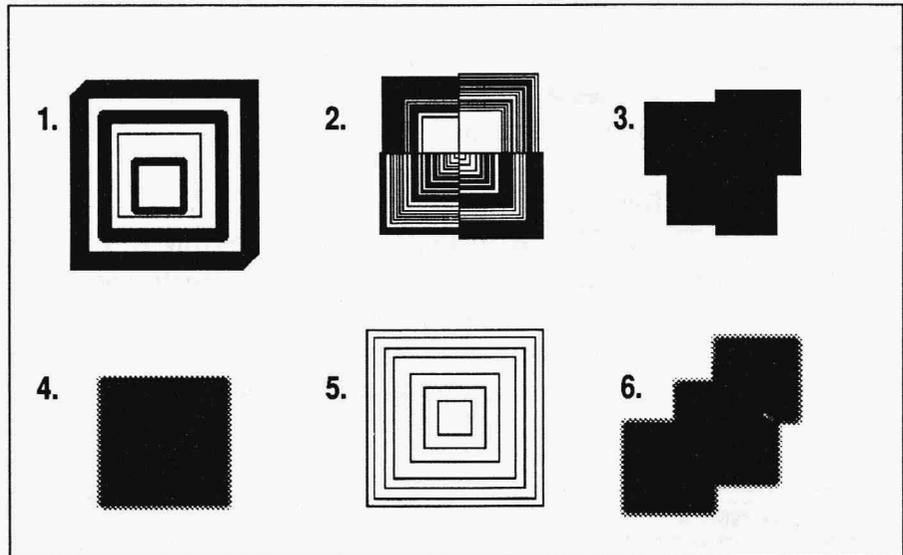
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**SQUARE**

The Square function allows you to draw squares. Like the Rectangle function, Square provides an easy way to draw right-angled, four-sided figures. Unlike Rectangle, Square ensures that all four sides are equal. No matter which direction you stretch the square in, it always proportions itself to be equal-sided. Square also shows a ghost frame before being painted on the canvas. Either Corners or Center must be active.



## SQUARE EXAMPLES



1. A Square drawing with **Corners** active, using various pens.
2. A Square drawing with **Corners** and **Repeat** active, using the single pixel pen and moving in a circular motion.
3. A Square drawing with **Corners**, **Filled**, and **Repeat** active, using the single pixel pen.
4. A Square drawing with **Corners**, **Filled**, and **Edge Blend** active, using the single pixel pen.
5. A Square drawing with **Center** and **Repeat** active, using the single pixel pen.
6. A Square drawing with **Corners**, **Filled**, **Repeat**, and **Edge Blend** active, using the single pixel pen.

**SQUARE CONTROLS****Filled**

When Filled is active, your square is completely filled with the current color or pattern. When Filled is inactive, the square is outlined.

**Repeat**

With Repeat active, holding down the Select button and moving the mouse will create a series of squares. Whether the squares are connected depends on what other buttons on the Square menu are selected and how fast you move the mouse. Press Cancel to end that set of squares.

**Corners**

Corners starts the square at one corner. Press Select to choose the starting point, stretch the ghost frame, and then press Select again to paint down the square.

**Center**

Center begins from midpoint and moves outward. Press Select at your square's midpoint, stretch the ghost frame in any direction, and press Select again to paint down the square.

**EdgBld**

Active only with Filled, Edge Blend blends the edge of filled squares with the colors on the canvas.



## SQUARE HINTS AND COMBINATIONS

Square can also be used to erase parts of the canvas. Make your current color the same as the background and choose the Filled button in the Square menu. Draw a square over the area of the canvas you want to erase.

The pen shape does not affect the edging of the square when Filled is active; all squares have the same 90-degree angled corners. But when Filled is inactive, squares painted with different pens reflect the pen's shape.

If you stretch a ghost frame for a square and then decide it's not where you want it, simply cancel, reposition your cursor, press Select, and stretch a new ghost frame.

**BUZZ  
SAYS**

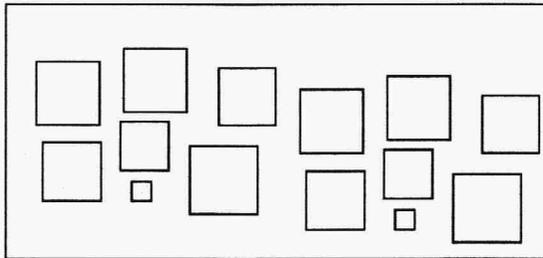


*Squares are always square. You cannot stop a square from being a square by moving part of the square off-screen. When you run into the edge of your screen, TEMPRA PRO stops and you get a square.*



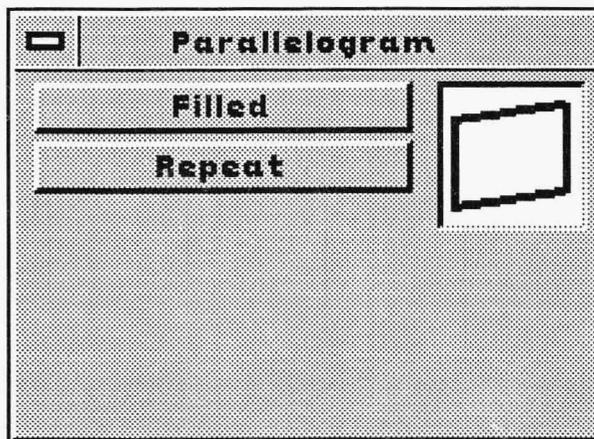
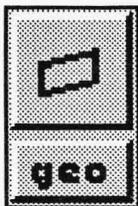
## SQUARE TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Square from the drop-down menu. Activate Corners. Turn off the other buttons.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Move your cursor to the desired starting point for your square and press Select. Move the mouse in any direction to make a square. When the ghost frame looks like what you want, press Select. The square is painted down on the canvas.



6. Cancel to return to the Main Menu Bar.
7. Try other combinations using the Filled, Repeat, Center, and Edge Blend buttons on the Square menu.

## PARALLELOGRAM

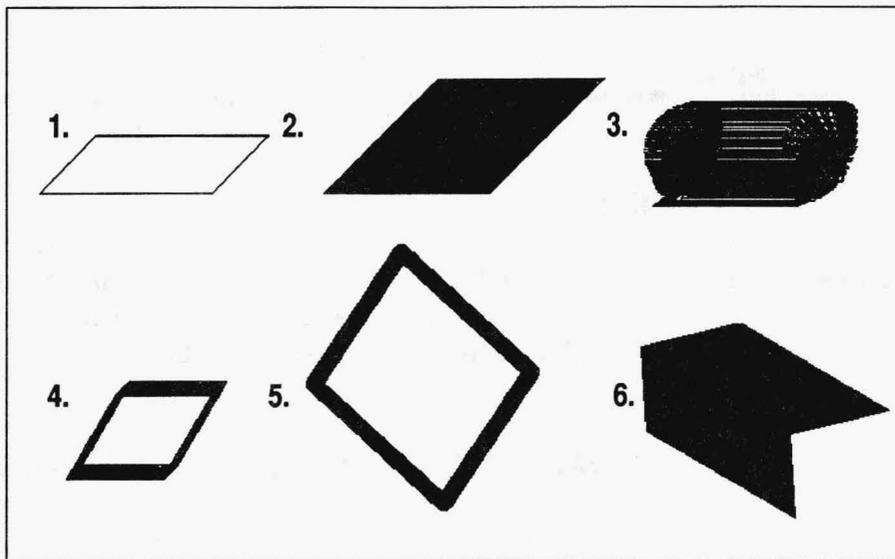


The Parallelogram function allows you to draw parallelograms, which are angled rectangles. Like Rectangle, Parallelogram has a ghost frame for positioning the shape before it is painted on the canvas. Parallelograms can be used to create diamond shapes because you control the angles of the shape. You can also make squares and rectangles using this function, although you cannot make parallelograms using Square or Rectangle.

Parallelogram works a little differently than Rectangle and Square. It uses a three-step Select process. Position the cursor where you want the first corner of the parallelogram to be and press Select. As you move the mouse, a line emerges. This line represents a side of your parallelogram. When you have stretched the line to your desired length, press Select again. As you move the mouse, a ghost frame of the parallelogram appears and expands or contracts around the first line plotted. Press Select to paint down the parallelogram.



## PARALLELOGRAM EXAMPLES



1. A Parallelogram drawing with no controls selected, using the single pixel pen.
2. A Parallelogram drawing with Filled active, using the single pixel pen.
3. A Parallelogram drawing with Repeat active, using the single pixel pen, holding Select and moving the mouse in a circular motion.
4. A Parallelogram drawing with no controls active, using the angled pen.
5. A Parallelogram drawing with no controls active, using the large round pen.
6. A Parallelogram drawing with Repeat and Filled active, using the single pixel pen.



## PARALLELOGRAM CONTROLS

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### Filled



When Filled is active, your parallelogram is completely filled with the current color or pattern. When Filled is inactive, your parallelogram is outlined.

### Repeat



You can create some interesting effects using Repeat. By holding down the Select button and moving the mouse, you can create a series of parallelograms connected at the first line selected. Press Cancel to end that set of parallelograms.

## PARALLELOGRAM HINTS AND COMBINATIONS

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You can simulate a wire frame book or paddleboat wheel using the Repeat control. Holding down the Select button as you move the mouse paints continuous parallelograms that resemble a wire frame book. Moving the mouse in a circular pattern while pressing Select at intervals produces a paddlewheel shape.

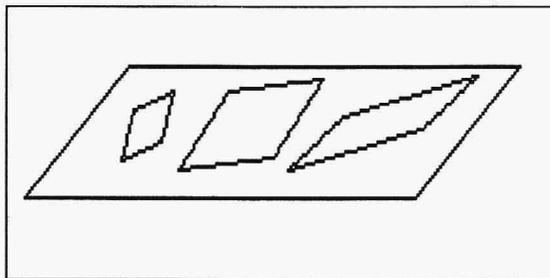
The pen shape does not affect the edging of the parallelogram when Filled is active; all filled parallelograms have sharply-angled corners. When Filled is inactive, the outlined parallelogram reflects the selected pen's shape.

You can cancel while stretching the ghost frame of your parallelogram if you wish to reposition the shape. However, the Main Menu Bar reappears when you press Cancel. Press Cancel a second time to remove the Main Menu Bar, press Select and stretch the new ghost frame.

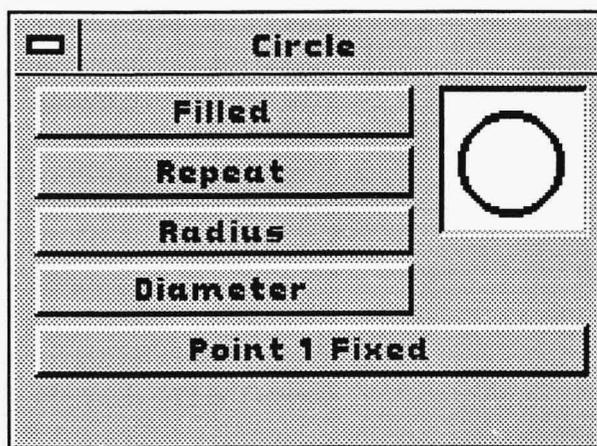
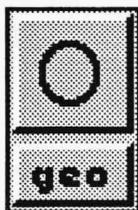


## PARALLELOGRAM TUTORIAL

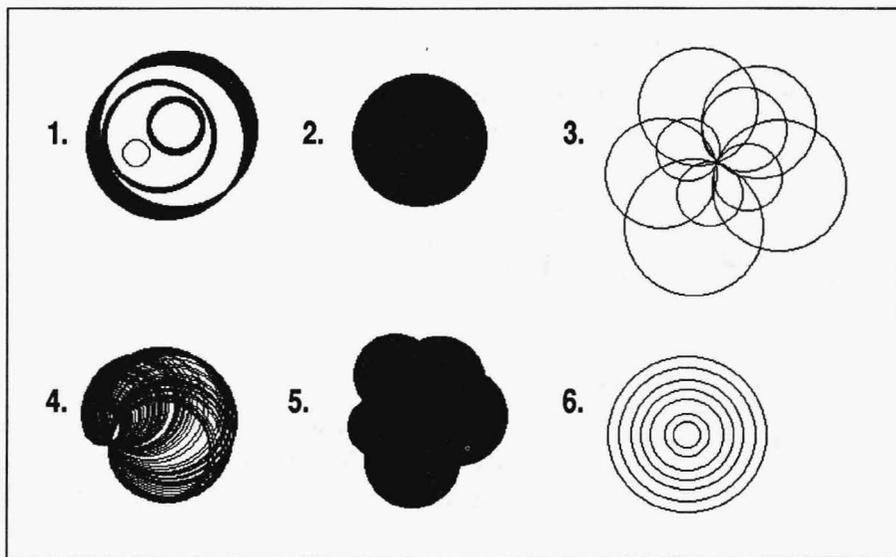
1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Parallelogram from the drop-down menu. Turn off all buttons.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Press Select where you want the first corner of your parallelogram to be. Stretch the ghost line in any direction to create the first side of your parallelogram. Press Select again. Move the mouse to stretch the ghost frame in any direction to create a parallelogram and press Select to paint it on the canvas.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Filled and Repeat buttons in the Parallelogram menu.

**CIRCLE**

The Circle function allows you to paint circles that are determined by either radius or diameter. Just as Square and Rectangle require Corners or Center to be active, Circle requires either Radius or Diameter to be active. Because Circle is distinguished from other rounded shapes, such as Ellipse, no matter how much you expand or contract your circle, it still proportions itself to be evenly rounded.

**CIRCLE EXAMPLES**

1. A Circle drawing with Radius active, using various pens.
2. A Circle drawing with Diameter and Filled active, using the single pixel pen.
3. A Circle drawing with Diameter and Point 1 Fixed active, using the single pixel pen.
4. A Circle drawing with Diameter, Point 1 Fixed, and Repeat active, using the single pixel pen, holding down Select, and moving the mouse in a circular motion.
5. A Circle drawing with Diameter, Point 1 Fixed, and Filled active, using the single pixel pen.
6. A Circle drawing with Radius and Point 1 Fixed active, using the single pixel pen.



## CIRCLE CONTROLS

### Filled



When Filled is active, your circle is completely filled with the current color or pattern. When Filled is inactive, your circle is outlined.

### Repeat



You can create interesting effects using Repeat. By holding down the Select button and moving the mouse, you can create a series of circles with the same starting point or center point.

### Radius



Radius plots the first point you select as the center of the circle. Press Select where you want the center of the circle to be. Move your cursor outward. Press Select when your circle is the desired size.

### Diameter



Diameter plots the first point you select as the first point of the perimeter of the circle. Press Select to choose the starting point and then move the cursor in any direction. Press Select when your circle is the desired size.

### Point 1 Fixed



Point 1 Fixed paints many circles with the same starting point or center point.



## **CIRCLE HINTS AND COMBINATIONS**

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Explore the variations of painting with Radius or Diameter activated. Using Repeat, you can make a number of different circles with the same center point or the same perimeter starting point. If you have Repeat, Point 1 Fixed, and Filled activated, you can create a filled circle that grows as you move the mouse outward.

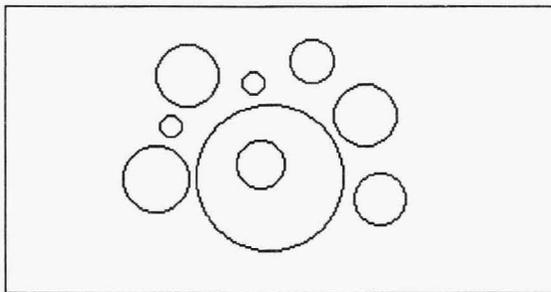
The pen shape does not affect the edging of the circle when Filled is active; all circles have the same round shape. When Filled is inactive, the outline reflects the selected pen's shape.

If you stretch a ghost frame for a circle and then want to change it, simply cancel, reposition your cursor, press Select, and stretch a new ghost frame.



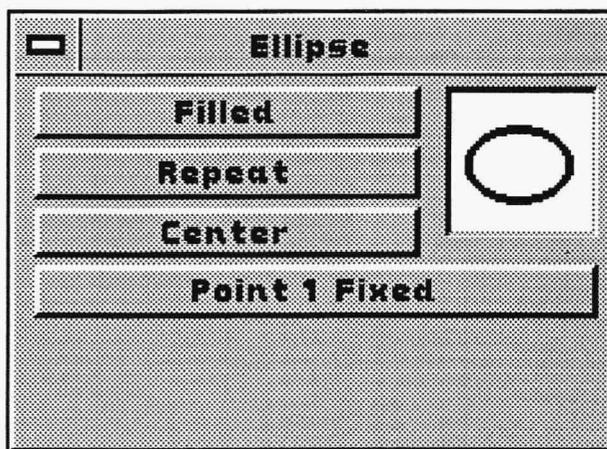
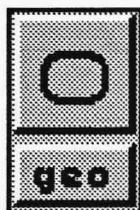
## CIRCLE TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Circle from the drop-down menu. Activate the Radius button and turn off the other buttons.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color from the Palette that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Press Select on the canvas where you want the center of your circle to be. Move the mouse out and in and watch the circle expand and contract. Press Select again when the circle is the desired size.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Filled, Repeat, Diameter, and Point 1 Fixed buttons in the Circle menu.

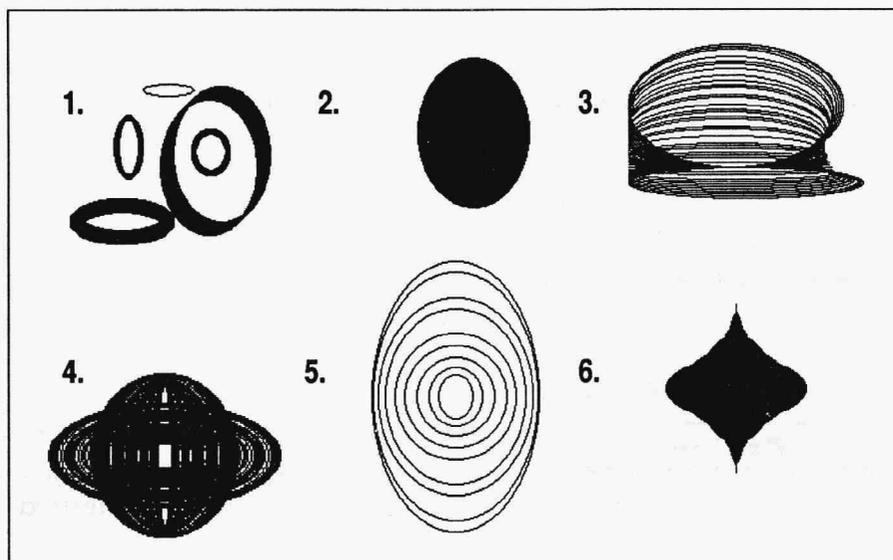
## ELLIPSE



The Ellipse function allows you to paint ellipses of various sizes and shapes. Ellipse is similar to Circle, except it does not use Radius or Diameter, although it does have a Center button. To draw an ellipse, simply press Select where you want the ellipse's starting or center point to be, stretch the ghost frame, and press Select to paint it on the canvas.



## ELLIPSE EXAMPLES



1. An Ellipse drawing with no buttons selected, using various pens.
2. An Ellipse drawing with Filled active, using the single pixel pen.
3. An Ellipse drawing with Point 1 Fixed and Repeat active, using the single pixel pen and holding Select while moving the mouse up.
4. An Ellipse drawing with Point 1 Fixed, Repeat, and Center active, using the single pixel pen and holding Select while moving the mouse up and down and sideways.
5. An Ellipse drawing with Point 1 Fixed and Center active, using the single pixel pen.
6. An Ellipse drawing with Point 1 Fixed, Center, Repeat, and Filled active, using the single pixel pen and making various ellipses by pressing and releasing the Select button.



## ELLIPSE CONTROLS

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### Filled



When Filled is active, your ellipse is completely filled with the current color or pattern. When Filled is inactive, your ellipse is outlined.

### Repeat



Only available when Point 1 Fixed is active, Repeat can create a series of ellipses when you hold down the Select button and move the mouse. Press Cancel to end that set of ellipses.

### Center



Center starts the ellipse from the center and moves outward. The ghost frame expands and contracts around the center point. Press Select when the ellipse is the desired shape.

### Point 1 Fixed



Point 1 Fixed establishes a control point for painting ellipses. This control point lies on a line that touches any ellipse drawn with that point. These lines that touch the ellipses are not visible on your screen. Ellipses with the same control point may or may not intersect, depending on where you stretch the ghost frame. Press Select when the ellipse is the desired shape. Activating this button makes Repeat available.



## **ELLIPSE HINTS AND COMBINATIONS**

Ellipses can only be painted side to side or up and down. If you want an ellipse at an angle, you can use the Clip Rectangle or Clip Polygon functions to rotate the ellipse.

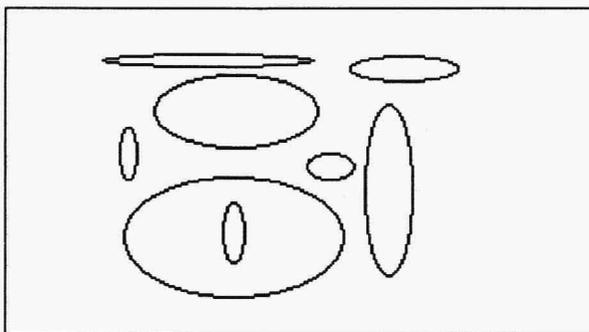
The pen shape does not affect the edging of the ellipse when Filled is active; all ellipses have the same rounded rim. When Filled is inactive, the outlined ellipse reflects the selected pen's shape.

If you stretch a ghost frame for an ellipse and then want to change it, simply cancel, reposition your cursor, press Select, and stretch a new ghost frame.



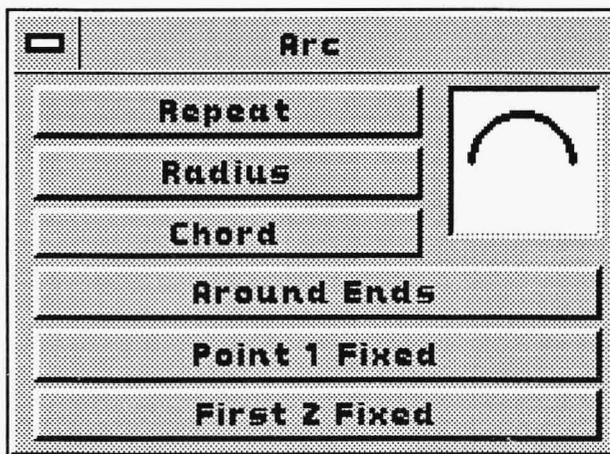
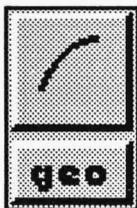
## ELLIPSE TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Ellipse from the drop-down menu. Turn off all buttons.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Press Select where you want the first point of your ellipse to be on the canvas. Move the mouse to shape the ellipse ghost frame. Press Select when the ellipse is the desired shape.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Filled, Repeat, Center, and Point 1 Fixed buttons in the Ellipse menu.

## ARC



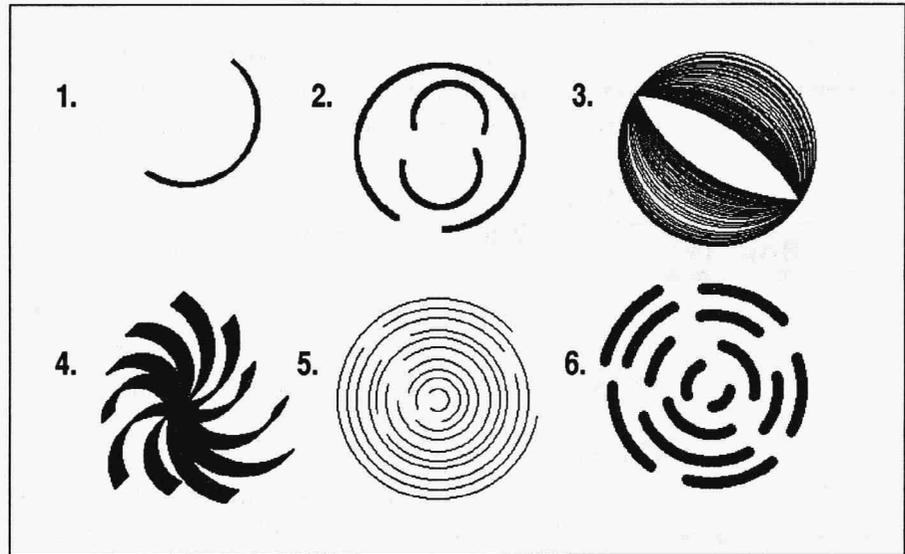
The Arc function allows you to paint semicircles. Arcs differ from curves, described in the next section, because arcs are subsets of circles and are limited in the stretch of the arch. Just as the Circle function must have the Diameter or Radius control selected, Arc must have either Radius or Chord active. You can combine Arc with various pens, colors, or patterns for different effects. Since Arc displays a ghost arc, you can adjust the size and shape, and even flip it over, before you paint it on the canvas.

To draw an arc, press Select to plot either the first or center point (marked by a "+") of your arc. Stretch the line that emerges and press Select to plot the second point. Move the mouse to shape or flip your arc (do not hold the Select button). Press Select to paint the arc. Each point you plot and the arc's midpoint are represented by "+" signs.

It's useful to remember that an arc is part of the perimeter of a circle. When you select points for painting an arc, you actually select points on a circle that your arc is part of. While this circle defines the arc, only the arc is actually painted on the canvas.



## ARC EXAMPLES



1. An Arc drawing with Chord active, using the diamond pen.
2. An Arc drawing with Chord and Around Ends active, using the small square pen.
3. An Arc drawing with Chord, First 2 Fixed, and Repeat active, using the single pixel pen and holding down the Select button while moving the mouse.
4. An Arc drawing with Chord and Point 1 Fixed active, using the slanted pen.
5. An Arc drawing with Radius, Point 1 Fixed, and Around Ends active, using the single pixel pen.
6. An Arc drawing with Radius and Point 1 Fixed active, using the small round pen.

## ARC CONTROLS

### Repeat

**Repeat**

Repeat, only active with First 2 Fixed, makes a series of arcs when you press and hold the Select button or when you continually press and release Select while moving the mouse.

### Radius

**Radius**

With Radius, the first point you plot is the center of the circle that defines the arc. A line emerges from the point. When you press Select again, that second point becomes one of the arc's endpoints. As you move the mouse, the arc forms with a third point. Press Select to paint the arc on the canvas.

### Chord

**Chord**

Chord paints arcs from one side to the other. The first point you select is one endpoint of the arc. A line emerges from that point. After you have stretched the line, press Select to plot the other endpoint. These two endpoints define the chord of your arc. You can move the mouse around to adjust the height of the arc. When the arc is the shape you want, press the Select button.

### Around Ends

**Around Ends**

Around Ends paints arcs of 180 degrees or greater (anywhere from semicircle to full circle).

### Point 1 Fixed

**Point 1 Fixed**

Point 1 Fixed paints a series of arcs with the same starting point. The starting point will be either the center point or the first point plotted, depending on whether you use Radius or Chord.

### First 2 Fixed

**First 2 Fixed**

First 2 Fixed paints a series of arcs with the first two points consistent. If you have Radius active, this control lets you draw arcs of greater than 180 degrees without using Around Ends. When Chord is active, you can stretch the height of the arc while the two endpoints stay in place.



## ARC HINTS AND COMBINATIONS

If you stretch the arc ghost frame to greater than 180 degrees without Around Ends active, the arc flips over. Stretch the ghost frame to less than 180 degrees with Around Ends turned on and the arc flips over.

If you stretch a ghost frame for an arc and then want to move it, simply cancel, reposition your cursor, press Select, and stretch a new ghost frame.

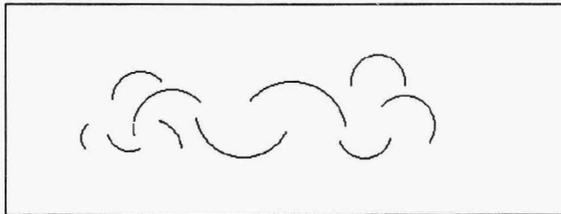
There are several ways to make a circle using the Arc function:

- With Radius, First 2 Fixed, and Repeat active, hold the Select button and move the mouse in a circle until it closes.
- With Radius and Around Ends active, keep moving the mouse until the endpoints (+) are right on top of each other.
- With Chord and Around Ends active, plot the first and second points right on top of each other. Move the mouse to expand the arc to the size you want (do not hold the Select button). Press Select to paint the "circle."



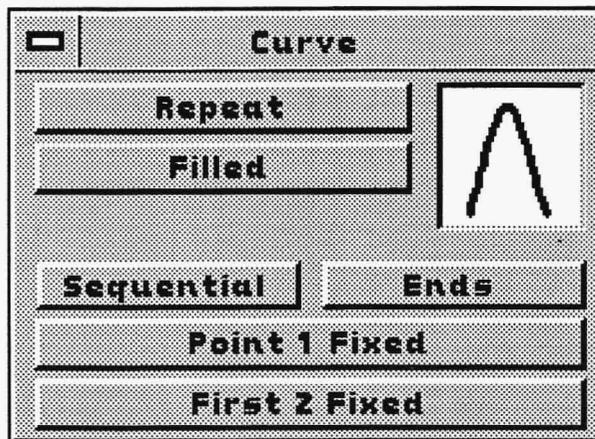
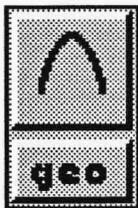
## ARC TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Arc from the drop-down menu. Activate Chord only.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from your screen.
5. Press Select to plot the first endpoint of your arc. Stretch the emerging ghost line. Press Select to plot the second endpoint. Move the mouse until the arc is stretched the way you want. Press Select to paint the arc.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Repeat, Chord, Around Ends, Point 1 Fixed, and First 2 Fixed buttons in the Arc menu.

## CURVE

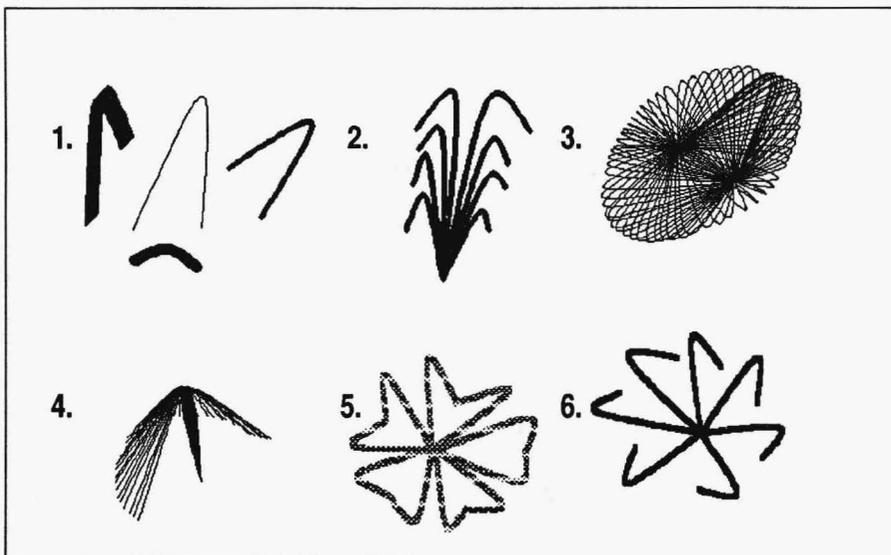


The Curve function allows you to paint curves, which are basically continuous non-straight lines. Curves are similar to arcs because they have three points (marked by “+” signs), two of which are fixed in place on the canvas. There the similarity ends. The third point of the curve, either a midpoint or an endpoint, can be manipulated in various ways. You can create curves of many different sizes and shapes, depending on the pen shape you select and how you stretch the ghost line.

In Curve, either the Ends or Sequential control must be active to paint a curve. As you plot your points, a ghost line emerges to display the shape of your curve. When the curve looks the way you want, press Select to paint it on the canvas.



## CURVE EXAMPLES



1. A Curve drawing with Ends active, using various pens.
2. A Curve drawing with Ends and Point 1 Fixed active, using the diamond pen.
3. A Curve drawing with Ends, Repeat, and First 2 Fixed active, using the single pixel pen and holding down the Select button while moving the mouse.
4. A Curve drawing with Sequential, Repeat, and First 2 Fixed active, using the single pixel pen and holding down the Select button while moving the mouse.
5. A Curve drawing with Ends and Point 1 Fixed active, using a pattern and the small square pen.
6. A Curve drawing with Sequential and Point 1 Fixed active, using the diamond pen and pressing and releasing the Select button.



## CURVE CONTROLS

### Repeat

**Repeat**

Repeat, only active with First 2 Fixed, paints a series of curves with the same first two points. Press and hold down the Select button or press and release it while moving the mouse. Press Cancel to end that set of curves.

### Filled

**Filled**

When Filled is active, your curve will completely fill with the current color or pattern. When Filled is inactive, your curve is outlined.

### Sequential

**Sequential**

Sequential paints a curve in sequential order; that is, first the endpoint, then the midpoint, then the second endpoint. Move the second endpoint until the curve looks the way you want. Press Select to paint it on the canvas.

### Ends

**Ends**

Ends paints curves starting with the two endpoints. After you plot the endpoints of the curve, you stretch the curve out by moving the mouse to reveal the midpoint. You can manipulate the curve from the midpoint before you paint it on the canvas. Press Select when you are ready to paint.

### Point 1 Fixed

**Point 1 Fixed**

Point 1 Fixed paints a series of curves with the same first point. When you press Select you see a new ghost line connected to the curve's first point. Press and release Select to paint curves. Press Cancel to end that set of curves.

### First 2 Fixed

**First 2 Fixed**

First 2 Fixed paints a series of curves with the first two points fixed to the canvas. If you use Repeat with this control, you can hold down the Select button and move the mouse to make many curves. Press Cancel to end that set of curves.



## CURVE HINTS AND COMBINATIONS

If you stretch a ghost curve and then decide you want to reposition it, simply cancel, press Select, and plot your points for a new ghost curve.

The distance between the three points in your curve determine the curve shape. If you stretch the point out along a line, your curve will be flat. If you make the points as if you were marking the ends of a triangle, your curve will be acute.

**BUZZ  
SAYS**



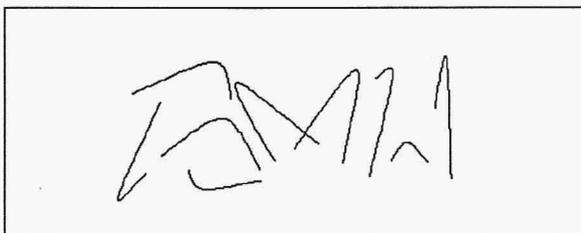
*You can make arches with Curve. Use Ends to make the base of the arch and then stretch out the top. The classic Roman arch can be painted with Curve.*



## CURVE TUTORIAL

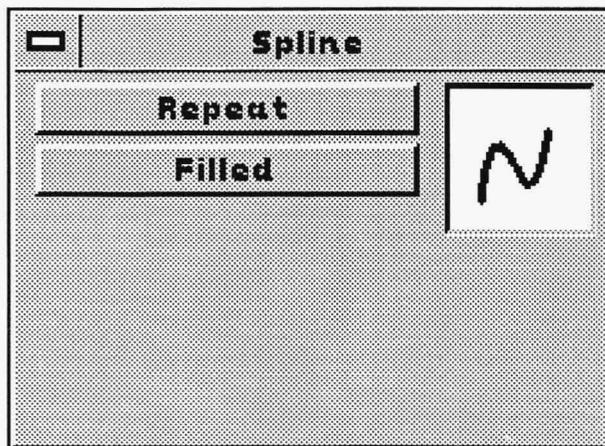
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1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Curve from the drop-down menu. Activate only the Ends control.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Press Select on the canvas to mark the first endpoint of your curve. Stretch the ghost line and press Select at the second endpoint. As you move the mouse, you see the curve form with a "+" sign at the midpoint of the curve. Manipulate this midpoint by moving the mouse until the curve looks the way you want. Press Select to paint down the curve.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Repeat, Sequential, Point 1 Fixed, and First 2 Fixed buttons in the Curve menu.

## SPLINE

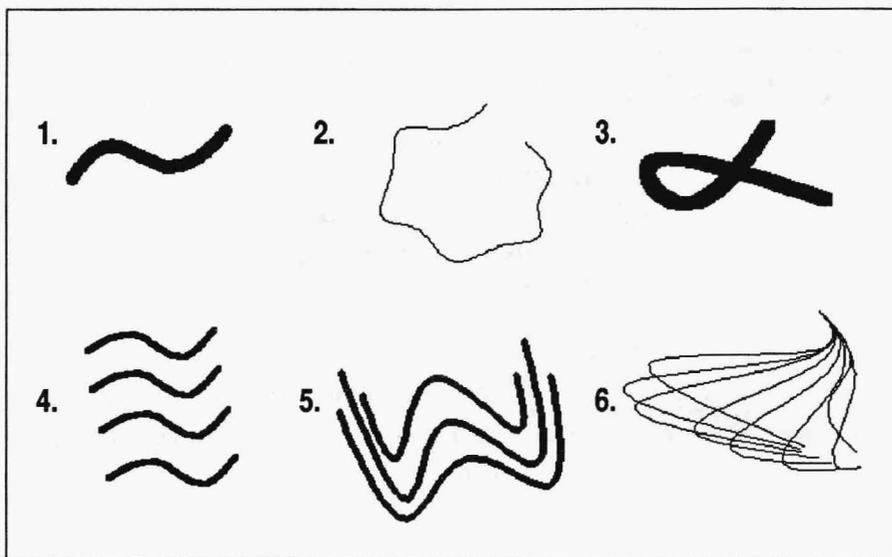


The Spline function allows you to paint curves with a minimum of three points that can be adjusted before they are painted on the canvas. This is a very versatile function that allows you to manipulate the shape and number of curves. Although Spline has only one control, Repeat, it is so powerful you may want to experiment with the various ways you can use it.

Spline is a little more complex than many of the other Geometry functions. You create splines by pressing Select to plot points on the canvas and then pressing Cancel to reveal a ghost spline. In addition to the ghost spline, you will see a Pick icon. You use this icon to select various control points in the spline (marked by a "+"). Select a control point and move it with the mouse to manipulate the curves on the spline. Press Select to nail down the control point in its new position. All the control points may be repositioned as often as necessary before painting down the finished spline. Press Cancel to paint the spline on the canvas.



## SPLINE EXAMPLES



1. A Spline drawing with no buttons selected, using the round pen.
2. A Spline drawing with no buttons selected, using the smallest pen.
3. A Spline drawing with no buttons selected, using the square pen and manipulating the control points.
4. A Spline drawing with Repeat active, using the small square pen, moving but not manipulating the repeated splines.
5. A Spline drawing with Repeat active, using the diamond pen, moving and manipulating the repeated splines.
6. A Spline drawing with Repeat active, using the smallest pen, pressing Select after pressing Cancel and manipulating the spline.

## SPLINE CONTROLS

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### Repeat

A rectangular button with a textured background and the word "Repeat" in bold, black, sans-serif font.

Repeat copies splines. When you press Cancel to paint your spline on the canvas, a new ghost spline appears over the painted-down spline. Each new spline looks like the previously painted spline, but is separate from it—they are not connected to each other and can be treated as individual shapes. You can move and manipulate this repeated ghost spline as often as you want and then paint it on the canvas.

### Filled

A rectangular button with a textured background and the word "Filled" in bold, black, sans-serif font.

When Filled is active, your spline is completely filled with the current color or pattern. When Filled is inactive, your spline is outline.

## SPLINE HINTS AND COMBINATIONS

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Spline uses both the Select and Cancel buttons to perform various functions. You need to pay close attention to which button you press to accomplish certain actions. Keep in mind that pressing Select *plots and activates* your control points. The Cancel button *reveals the ghost spline and paints the spline* on the canvas.

You only need to position the Pick icon over the control points and press the Select button to manipulate the curves; don't hold down the Select button and move the mouse around because you will not be able to see the ghost spline moving.

Because the Cancel button is used to paint the spline on the canvas, you cannot use it to cancel out of your drawing. Once you start creating a spline, you have to paint it on the canvas (by pressing Cancel) before you can start a new spline.



With Repeat active, using the Select and Cancel buttons can be somewhat tricky. If you press Select immediately after you press Cancel to paint your spline, the new ghost spline stays in place over the painted spline. You can manipulate your new spline from there. Also, you may have to look for the Pick icon because it may not be located right over one of the control points. Experiment with different combinations using the Select and Cancel buttons when Repeat is active. If you move an entire ghost spline while using Repeat, remember that you must press Select to fix the new location of the ghost spline on the canvas (the Pick cursor appears) before pressing Cancel to paint the spline on the canvas.

You must see the Pick icon before you can press Cancel and paint your spline on the canvas. When you select a control point, the Pick icon disappears. Press Select to nail down the control point and bring the icon back, and then press Cancel to paint the spline on the canvas. If you press Cancel when the Pick icon is not visible, the spline curve you just manipulated resumes its previous position.

**BUZZ  
SAYS**

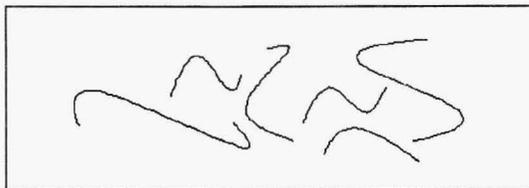
*You can combine Spline with the Soften filter to blend a clipping or portion of an image onto an image. After you have the ghost image of the spline on the canvas, you can adjust it to match the edge of the area you want to blend into the picture. The Soften filter follows the spline around the area.*



## SPLINE TUTORIAL

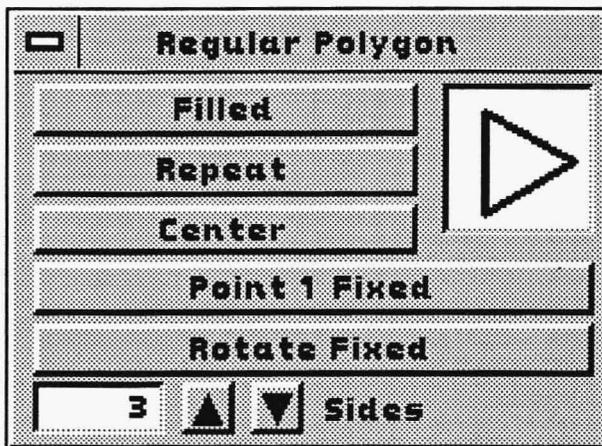
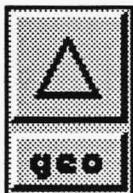
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1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Spline from the drop-down menu. Turn off Repeat.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Press Select to plot your points on the canvas. Plot as many points as you want. Press Cancel to reveal the ghost spline. A Pick icon appears. Press Cancel again to paint the spline on the canvas. Try another spline. Plot the points by pressing Select wherever you want a control point to appear. Press Cancel to see the ghost line. Move the Pick icon to one of the control points and press Select. Manipulate the spline curve. Press Select again to nail down that control point and bring back the Pick icon. Select another control point to manipulate if you want. When you are finished, press Cancel to paint the spline.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Repeat button.

## REGULAR POLYGON

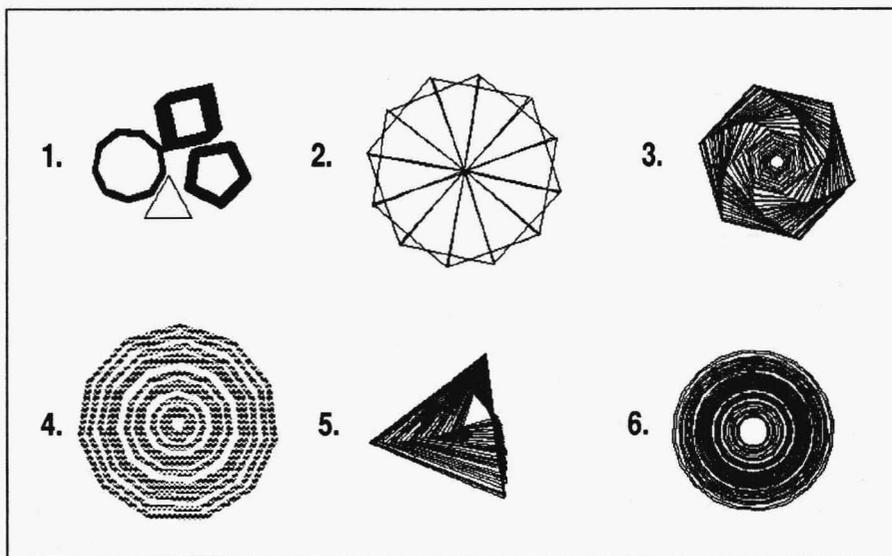


The Regular Polygon function allows you to draw equal-sided polygons. These figures range from a minimum of three sides (a triangle) to a maximum of 20 sides (a circle). While you can paint regular polygons using the Point to Point control in the Line function, Regular Polygon can create the same shape quickly and ensure that all sides are equal.

A ghost polygon appears after you press Select. That first point is anchored to the canvas, but you can rotate the ghost polygon until it is in the position you want. Press Select to paint the polygon on the canvas.



## REGULAR POLYGON EXAMPLES



1. A Regular Polygon drawing with no buttons active, using different polygons and various pens.
2. A Regular Polygon drawing with Point 1 Fixed active, 3 sides, using the single pixel pen, holding Select while moving the mouse.
3. A Regular Polygon drawing with Point 1 Fixed and Repeat active, 6 sides, with the single pixel pen, holding Select and moving the mouse.
4. A Regular Polygon drawing with Rotate Fixed, Point 1 Fixed, Repeat, and Center active, 11 sides, using a pattern and the small round pen, pressing and releasing the Select button.
5. A Regular Polygon drawing with Rotate Fixed, Point 1 Fixed, and Repeat active, 3 sides, using the single pixel pen and holding Select while moving the mouse.
6. A Regular Polygon drawing with Point 1 Fixed, Repeat, and Center active, 20 sides, using the single pixel pen.



## REGULAR POLYGON CONTROLS

### Filled



When Filled is active, it completely fills the regular polygon with the current color or pattern. When Filled is inactive, the polygon's shape is outlined.

### Repeat



Repeat, only active with Point 1 Fixed, paints a series of regular polygons connected at the first point or midpoint. Press and hold down Select or press and release Select while moving the mouse.

### Center



Center draws a regular polygon with the center as its first point. The polygon expands and contracts from midpoint as you move the mouse. Press Select to paint the regular polygon on the canvas.

### Point 1 Fixed



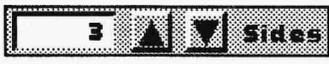
Point 1 Fixed draws a series of regular polygons with the same first point or midpoint. Press Select to paint each polygon. With Repeat active also, you can hold down the Select button while moving the mouse. Press Cancel to end that series of regular polygons.

### Rotate Fixed



Rotate Fixed activated by itself is like having none of the controls activated. However, when combined with Point 1 Fixed, the polygon is also rotated from a fixed control point. The polygon expands or contracts as it rotates depending on how you move the mouse. This creates a "rotating tunnel" effect, especially when Repeat is also active.

### Sides



The Sides fine-tuning button determines the number of sides the regular polygon has. The range is from 3 (a triangle) to 20 (almost a circle).



## REGULAR POLYGON HINTS AND COMBINATIONS

The Regular Polygon function is very sensitive to mouse movement — moving the mouse even a short distance can greatly affect the positioning of a regular polygon. Mouse movement controls both the size and rotation of the ghost frame at the same time. You may need to experiment with different settings in Regular Polygon to perfect your control of this function.

You can rotate the ghost polygon around its first point even if you have no controls selected. This is helpful in positioning the polygon exactly the way you want.

The pen shape does not affect the edging of the regular polygon when Filled is active; all polygons have the same edge. When Filled is inactive, the outlined regular polygon reflects the selected pen's shape.

### BUZZ SAYS

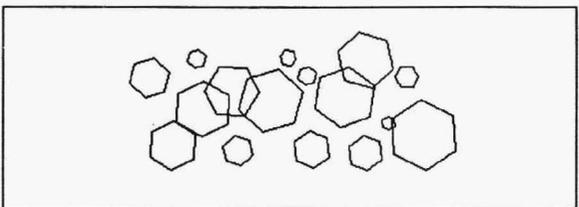


*A polygon with 20 sides is nearly a circle, but not quite. You can draw a set of polygons on your canvas with anywhere from 3 to 20 sides. Step back from your screen until the 20-sided polygon looks like a circle. You won't have to step too far back.*



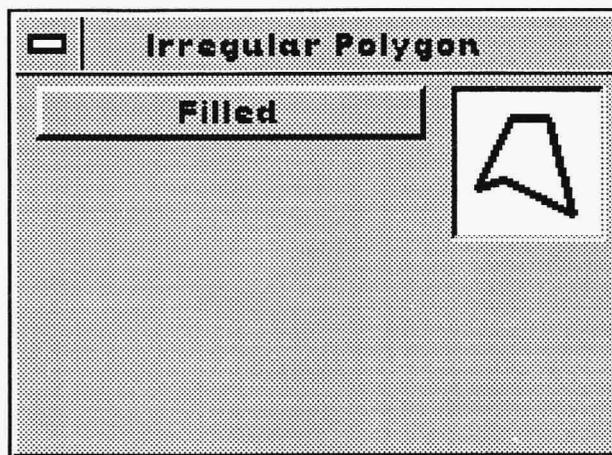
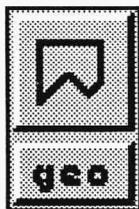
## REGULAR POLYGON TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Regular Polygon from the drop-down menu. Turn off all buttons. Adjust the Sides fine-tuning button to 5 sides by either selecting the box containing the number, typing in "5," and pressing Enter on the keyboard, or by using the up-and-down arrows.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Press Select to plot the first point of your regular polygon on the canvas. Stretch out and rotate the ghost frame. Press Select when the polygon is at the desired size and position.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Filled, Repeat, Center, Point 1 Fixed, and Rotate Fixed controls and the Sides fine-tuning button on the Regular Polygon menu.

## IRREGULAR POLYGON

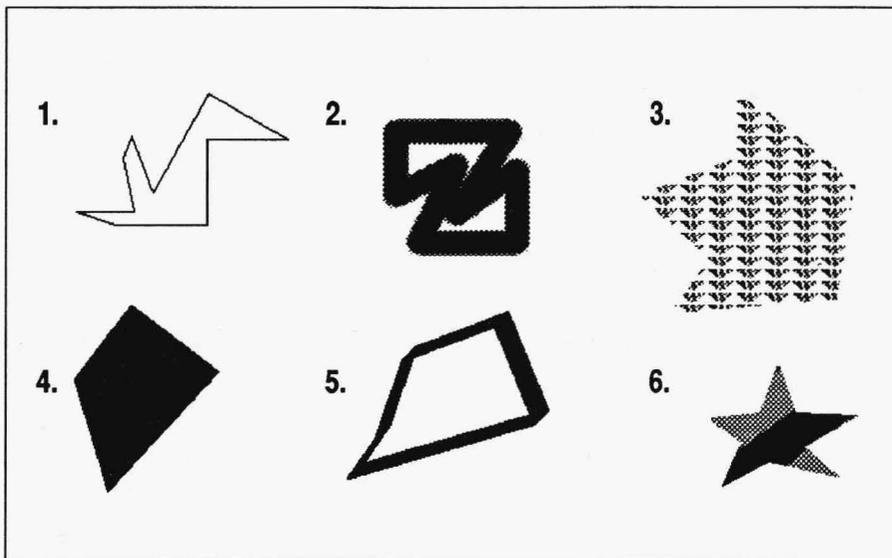


The Irregular Polygon function allows you to make closed figures with three or more line segments. Unlike Regular Polygon, this function's lines can go in any direction, can be any length, and can cross each other. What makes Irregular Polygon different from the Point to Point control in the Draw Lines menu is that Irregular Polygon automatically closes the polygon for you. If your first and last points are not connected, Irregular Polygon automatically draws a line connecting those two points.

Press and release the Select button to plot your points and stretch your lines. When you press Cancel, the polygon is painted on the canvas. Irregular Polygon has only one control, Filled.



## IRREGULAR POLYGON EXAMPLES



1. An Irregular Polygon drawing with no buttons active, using the single pixel pen.
2. An Irregular Polygon drawing with no buttons active, using Airbrush and the small square pen.
3. An Irregular Polygon drawing with Filled active, using Pattern and the single pixel pen.
4. An Irregular Polygon drawing with Filled active, using the single pixel pen.
5. An Irregular Polygon drawing with no buttons active, using the slanted pen.
6. An Irregular Polygon drawing with Filled active, using Color Spread and the diamond pen.



## ***IRREGULAR POLYGON CONTROLS*** \_\_\_\_\_

### **Filled**



When Filled is active, the Irregular Polygon is completely filled with the current color or pattern. When Filled is inactive, the Irregular Polygon is outlined.

## ***IRREGULAR POLYGON HINTS AND COMBINATIONS*** \_\_\_\_\_

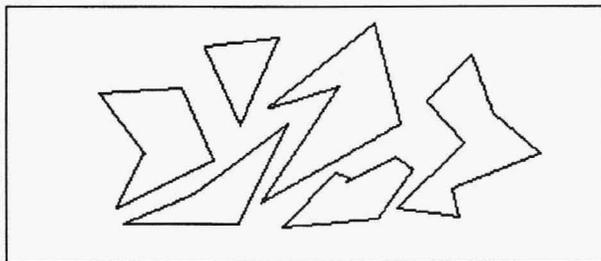
Because Irregular Polygon uses Cancel to paint the shape onto the canvas, you cannot press Cancel while stretching the ghost lines and reposition the shape. Once you start creating an Irregular Polygon, if you press the Cancel button you're going to get an irregular polygon whether you want one or not.

The pen shape does not affect the edging of the irregular polygon when Filled is active; all filled irregular polygons have the same angled corners. When Filled is inactive, the outlined irregular polygon will reflect the selected pen's shape.



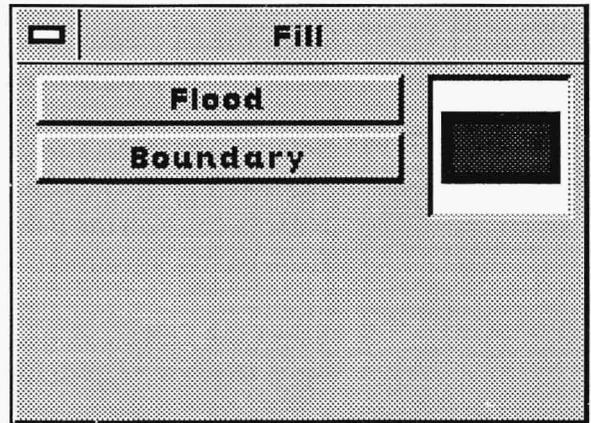
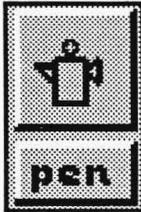
## IRREGULAR POLYGON TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Irregular Polygon from the drop-down menu. Make sure Filled is inactive.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background color of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Press Select at the desired point on the canvas where you want to start your irregular polygon. Stretch the line in any direction. Press Select to plot another point. Continue stretching and plotting until you have a figure. Remember, you don't have to stretch the last line between the first point plotted and the last point plotted. TEMPRA PRO automatically does that for you. Press Cancel to draw the last line and paint.

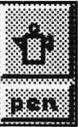


6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the Filled button in the Irregular Polygon menu.

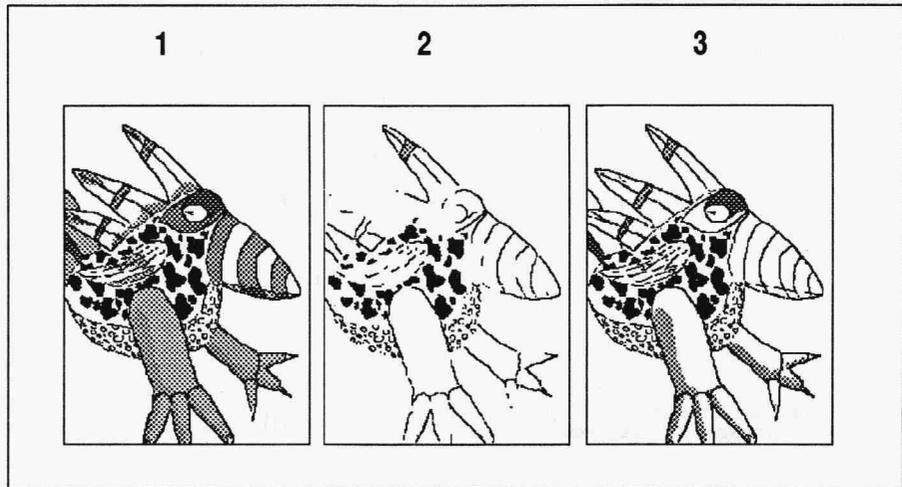
## FILL



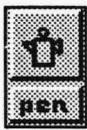
Fill acts similarly to a paint can tipped onto the screen: the current color, spread, or pattern disperses over the screen until it meets either another color or a “protected” color. Flood and Boundary generally produce similar results when filling a single-color image on a single-color background. The distinction between the two controls is especially significant when you work with true-color images, which often have many shades of one color. Flood replaces *only* the color you select and stops when it meets any other color. Boundary replaces *every* color on the screen with the current color until it meets the “protected” color. Since the Fill function works with Pick and Fill icons rather than the regular cursor, you don’t need a pen or geometry tool. You can combine Fill with other functions, such as Mask, Pattern, and Color Spread, to create some interesting effects.



## FILL EXAMPLES



1. An original image of Buzz.
2. An image of Buzz using Fill with the Boundary control active. Using the Pick icon, we selected the black in one of Buzz's spots to be our "protected" color. Then we filled the screen with our current color, which was white. The white replaced all the colors except our protected color. Also, the gray inside the spear was not filled with white because the gray was completely enclosed with the black (the protected color), leaving no opening for the white to fill.
3. An image of Buzz using Fill with the Flood control active. Using the Fill icon, we selected the light gray areas on Buzz, which were filled with our current color (white). The fill process stopped when it encountered another color, which may have been the darker gray or the black. We selected once on each gray area (once on each gray portion of the beak, once on each leg, once on the lower portion of the eye, once on each gray portion in the spears, and once on each side of the tail).



## FILL CONTROLS

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### Flood

**Flood**

Flood distributes the current color, pattern, or spread over the screen until it meets a change in color. When you activate Flood and press Cancel to remove the menus, a Fill icon replaces the cursor on the screen. Position the Fill icon on top of the color you want to replace and press Select. The current color fills the screen and stops at a change in color. You can keep selecting as many areas as you want to fill the screen. Press Cancel to return to the Main Menu Bar.

### Boundary

**Boundary**

Boundary distributes the current color, pattern, or spread over the screen until it meets a "protected" color. When you activate Boundary and press Cancel to remove the menus, a Pick icon replaces the cursor on the screen. Position the Pick icon on top of the color you *do not* want to fill and press Select. That color is your boundary color. The Pick icon becomes a Fill icon. Using the Fill icon, select any color on the screen that is different from the boundary color. The current color spreads across the screen and stops at the boundary color. You can select as many areas as you want to fill the screen. Press Cancel to change the Fill icon back into a Pick icon and repeat the process. To return to the Main Menu Bar, press Cancel twice: pressing Cancel once changes the Fill icon to the Pick icon; pressing Cancel again returns you to the Main Menu Bar.



## FILL HINTS AND COMBINATIONS

Fill is useful for creating outlined geometric figures filled with a color, pattern, or spread. Although you can use the Filled control in the Geometry menu to fill an entire figure with a color, pattern, or spread, you lose the pen shape and the figure won't be outlined. If you paint an outlined geometric figure and then fill it using the Fill function, the outlined figure retains the original pen shape and takes on the new color, pattern, or spread.

You can press Cancel to stop the Fill process in midstream, but canceling doesn't affect the color that has already filled the canvas.

Fill goes into every connected area of the target color on your current screen. If your total canvas size is larger than your screen size, Fill works only on the areas of color on your current screen. If the target color extends beyond your screen onto a larger canvas, you must move to the other areas of the canvas and fill the target color in those areas.

The speed of the fill process depends on which functions are combined with Fill; some functions will slow down the process a little.

You can use Fill to make a mask. Select the EDT functions push-button and select the Mask function. Select the Mask button on the Mask Editor menu. Activate Boundary in the Fill menu and flow Mask over an area that is bounded by a single color. The area where the mask flowed will be protected.

**BUZZ  
SAYS**



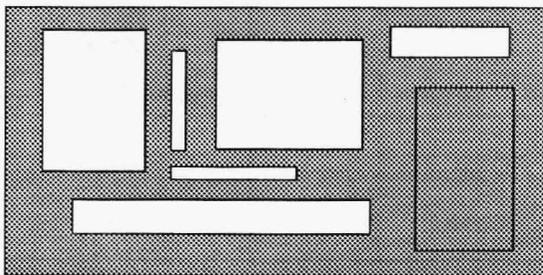
*Fill works best when you know what the colors are in your image. If you painted them, you can fill them. On scanned images, Fill won't work nearly as well. Scanned images usually have mixtures of colors that are difficult to distinguish at a glance.*

**FILL TUTORIAL**

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1. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. When the Ink Color menu pops up, select white from your palette. Select the Clear button on the Ink Color menu. The Clear buttons on the Ink Color menu and on the Main Menu Bar change to white. Select the Clear button on the Main Menu Bar. Select "Yes" to clear the screen. Select another color on the palette to be your current color.
2. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Activate the Corners control.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Paint several rectangles on the canvas.
6. Press Cancel to return to the Main Menu Bar.
7. Select the INK functions icon on the Main Menu Bar to open the Ink Color menu. Select a color on the palette that is different from the background and the current color.
8. Select the PEN functions push-button to open the Pen drop-down menu. Select Fill on the drop-down menu. Activate the Flood control.
9. Press Cancel on the mouse to clear the Main Menu Bar from the screen.

10. A Fill icon appears on your screen instead of the cursor. Position the Fill icon on the area inside one of the rectangles and press Select. The rectangle fills with the current color. Select an area outside the rectangle. The background changes from white to the current color. But the area inside the other rectangles are still white.



11. Press Cancel to return to the Main Menu Bar.
12. Try loading an image and see the effects Flood and Boundary have when you are working with various colors.





## TEMPRA WAND CONTROLS

### Pen



The row of pens across the top of the menu are the first four pens available in the Pen menu. You can change the pens in the Wand menu by changing the pens in the Pen menu. When one of the pens is active, you can create or clear mattes in the freehand mode.

### Polygon



The Polygon button allows you to create a polygonal-shaped matte on the screen. If you press and hold down the Select button on the mouse while moving it, you can create an unrestricted polygon. To make straight-lined polygons, press and release the Select button and then move mouse for each line you want to make. To fill the polygon with the paint or neutral color, press the Cancel button.

### TEMPRA Wand



The TEMPRA Wand button defines the matte based on color or gray-scale values. The values are determined by the number you type in the Sensitivity box that appears when you select this button. The higher the sensitivity, the broader the range of colors that will be selected. If the sensitivity is set to 0, only one color is selected and the wand acts as a seed fill. If the sensitivity is set to 100, nearly all the colors on the screen are selected. Using the wand, it's possible to select all the blues in the sky of an image. Simply touch the wand in the area of the image you want to define as a matte. You don't need any other draw tools with the wand, and it works only with the neutral blue or paint mattes (not outlined). You can't use the Clear Matte or Eraser with the wand.

### Clear Matte



The Clear Matte button clears the matte you've created from the image, allowing you to create a new matte or pick up the matte from the last point. Once you've applied the paint to the canvas, you can't clear the matte. The Undo button in the Main Menu will not clear any mattes created using the TEMPRA Wand.

### Reverse

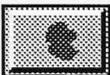


The Reverse button reverses the matte. The reversal makes the matte areas unmatte and the unmatte areas matte.



### Outline

The Outline button shows an outline of the matte as a black line with a white center. Outline works only with the Polygon draw tool.



### Blue Matte

The Blue Matte shows a neutral blue color in the matte, which is the area of the image where the paint or pattern will be applied.



### Paint Matte

The Paint Matte shows the actual color or pattern in the matte. This allows you to see if the effect is what you're looking for before you apply the paint to the matte. *The paint is not permanent until you apply it using the Apply button.*



### Disk

The Disk button brings up another menu for you to save the matte as a mask. The newly created mask can be used later in the Mask Editor. You can load a mask created in the Mask Editor or one saved from the TEMPRA Wand menu. The Overlay button allows a mask that was created earlier to be loaded on top of the current matte.



### Escape

The Escape button stops the use of the TEMPRA Wand and returns you to the Main Menu. The changes on screen are not saved and paint is not applied unless you've selected the Apply button.



### Eraser

The Eraser lets you clear the matte from specific areas of the image using a pen or polygon draw tool.



### Pencil

The Pencil lets you define a matte on specific areas of the image using a pen or polygon draw tool.



### Apply

The Apply button paints the current color, pattern, or filter to the matte. Once you select Apply, the matte becomes permanent and neither the Clear Matte nor Main Menu Undo button can remove it.



## TEMPRA WAND TUTORIAL

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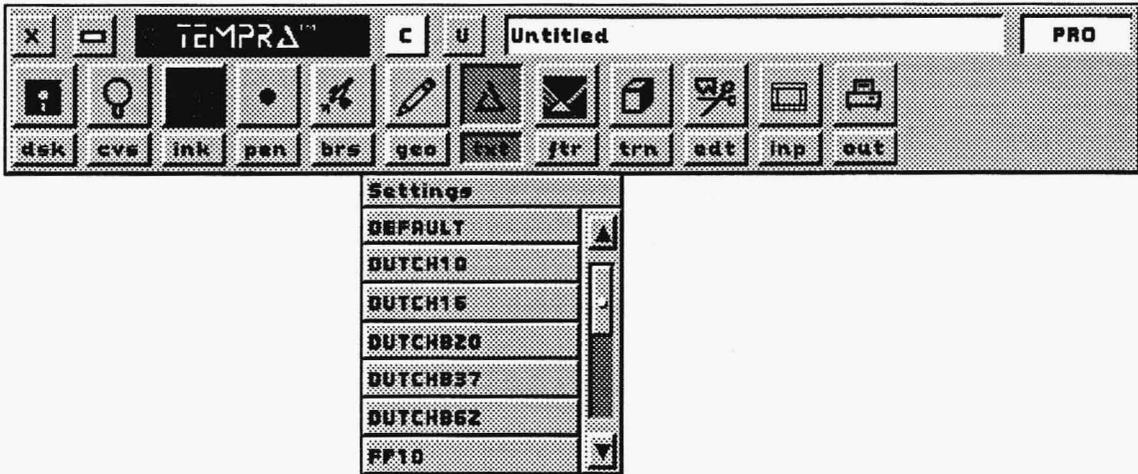
1. Start with an image on the screen and no filters active. If a filter is active, move to the FTR icon and press Select to turn it off.
2. Move to the INK drop-down menu button and press Select. The INK drop-down menu appears. Select Color from the drop-down menu. The Ink Color menu appears.
3. Select a color from the palette on the menu.
4. Move to the GEO drop-down menu button and press Select. The GEO drop-down menu appears.
5. Move to the TEMPRA Wand button and press Select. The menus disappear from the screen and the Wand Control menu appears.
6. Press Cancel and the Wand control menu disappears and a sensitivity fine-tuning box appears. Set the sensitivity level to 15. Press Cancel and the sensitivity fine-tuning box disappears.
7. A Pick box appears instead of an arrow cursor. Move the pick box to an area of the image that contains a mixture of similar colors. Press Select.
8. A blue matte indicator covers the selected color and the colors adjacent that are similar.
9. Press Cancel to return to the Wand Control menu. Select the icon to the left of the Wand icon on the second row to start applying the wand using freehand or polygons. The Wand control menu disappears and you return to the screen.
10. Move the arrow cursor to the area that was just covered by the blue matte. Press Select and hold the Select button down. Move the mouse to circle an area greater than was originally covered. Press Cancel to close the area.



11. The area that had the freehand line drawn around it is now covered with a blue matte indicator.
12. Press cancel to return to the Wand control menu. Select the icon of the pencil with the eraser pointed down. Press Cancel to return to the screen.
13. Move the arrow cursor to an area adjacent to the blue matte area and press Select. Drag the ghost line into the blue matte area and press Select. Drag the ghost line to a second location in the blue matte area and press Select. An irregular polygon starts to appear.
14. Hold down the Select button and move the cursor back toward the starting point of the irregular polygon. Press Cancel.
15. The part of the blue matte area that was just selected is removed from the screen. Press Cancel and the Wand control menu appears.
16. Move to the Apply button on the bottom right of the Wand Control menu. Press Select. The area covered by the blue matte indicator disappears and is replaced by the current color.
17. Move to the icon labeled "ESC" in the bottom left of the Wand Control menu. Press Select and return to the menu bar.
18. Move to the GEO drop-down menu and press Select. When the drop-down menu appears, select any other GEO tool and the TEMPRA Wand will stop being the current tool.

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# Text Functions



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## INTRODUCTION

The Text functions allow you to type characters on your canvas. While Text is not designed to be a word processor, you will find it a useful tool. TEMPRA PRO uses Bitstream® bitmapped fonts. They are not outline fonts and are different from the fonts used in laser printers. Only the fonts supplied with TEMPRA PRO can be used in TEMPRA PRO. However, your ability to use fonts in TEMPRA PRO is virtually unlimited. You can type text with patterns and color spreads. You can warp and skew text. And you can type text at almost any angle on your canvas. Additionally, you can antialias and, on 8-bit displays, color spread animate your text.

The Text functions drop-down menu works a little differently than most others in TEMPRA PRO. When you open the Text drop-down menu, you see selector bars for Settings and various fonts. The Settings selector bar is the only one that has a function menu associated with it.

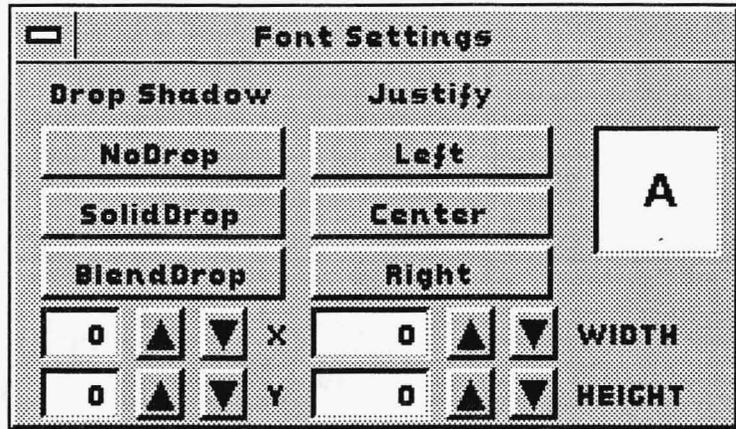
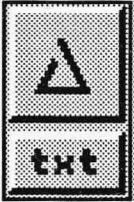
The other selector bars simply let you select a current font. When you select a font, its selector bar is highlighted (usually pink). You can change your current font as often as you like, but you can have only one font active at a time. TEMPRA PRO has four fonts in various sizes: Fixed Pitch and Dutch (serif fonts) and Default and Swiss (sans serif fonts). Slide the elevator bar to reveal more font selections.

If you select the Text functions icon on the Main Menu Bar, you will open the Font Settings function menu. This shortcut is useful for making adjustments to the current font. The Text functions icon doesn't access the fonts selector bars because they have no additional menus. Select the Text functions push-button on the Main Menu Bar to access the fonts selector bars.



txt

## FONT SETTINGS



The Font Settings menu lets you determine the appearance and justification of your text. Although the fonts have specified sizes in the drop-down menu, you can adjust the height and width of the fonts to produce variations of the preset fonts. One of the Drop Shadow and Justify controls must be active to use Text.

The arrow-shaped cursor that you use with the other TEMPRA PRO functions is replaced in Text by a Text pointer, which is a vertical and horizontal line intersecting to form a "corner." Position the Text pointer on the canvas where you want your text to start and press Select. By moving the mouse, you can stretch a "baseline" in any direction for the text to follow. You must stretch a baseline for anything other than horizontal text. For horizontal text, the baseline is optional. For horizontal text, simply select a starting point and type the text. If you stretch a baseline, press Select again to "nail down" the baseline. The baseline disappears and the text pointer returns to the starting point. The text you type aligns to the baseline you created. Press Select to paint the text on the canvas.



## FONT SETTINGS EXAMPLES



1. The Text pointer.
2. Text typed in Dutch37, Center active. Text on the left has No Drop active. Text on the right has Solid Drop active with an X value of 5 and a Y value of 3.
3. Text typed in SwissB37, Blend Drop and Center active. The drop has an X value of 4 and a Y value of 2. We stretched an angled baseline over a single-colored circle.
4. Text typed in SwissB37, No Drop and Right active. Text on the left is with the Width and Height values set at 100. Text on the upper right has a Width of 50 and Height of 100. Text on bottom right has a Width of 100 and Height of 50.



## FONT SETTINGS CONTROLS



NoDrop

### Drop Shadow: No Drop

No Drop displays the text character without a drop shadow behind it. Adjusting the values with the X and Y fine-tuning buttons when No Drop is active has no effect. You can adjust the text's height and width.



SolidDrop

### Drop Shadow: Solid Drop

Solid Drop displays the text character with a solid black drop shadow behind it. You can adjust the position of the drop-shadow using the X and Y fine-tuning buttons, as well as the height and width of the text characters.



BlendDrop

### Drop Shadow: Blend Drop

Blend Drop displays the text character with a translucent drop shadow behind it. The drop shadow averages the difference between the character color and the object color behind it (the canvas, a spread, an image, and so on). You can adjust the values with the X and Y fine-tuning buttons, as well as the height and width.



X

### Drop Shadow: X

The X fine-tuning button adjusts the position of the drop shadow on an X-axis (from side to side). The values range from -5 to 5, with -5 placing the drop shadow to the extreme left of the text character and 5 placing the shadow to the extreme right.



Y

### Drop Shadow: Y

The Y fine-tuning button adjusts the position of the drop shadow on a Y-axis (up and down). The values range from -5 to 5, with -5 raising the shadow above the text character and 5 dropping the shadow below the character.



Left

### Justify: Left

When Left is active, typed text flows onto the canvas to the right of the selected starting point. The text is left-justified — the starting point is set as the left margin for the text. This is probably the justification you'll use most.



### Justify: Center

Center uses your starting point as the center of your line of text. The Text pointer moves to the right as you type (unless you stretch a baseline to the left of your starting point). This justification is most noticeable when you have more than one line of text and is useful for centering text in the middle of an object.



### Justify: Right

When Right is active, typed text flows onto the canvas to the left of the selected starting point. The text is right-justified — the starting point is set as the right margin for the text.



### Width

Width determines how narrow or wide your characters appear. Values range from 25 to 100, with 100 being the actual width of the font you selected and 25 being 1/4 of the actual width. This control, used along with Height, lets you change the appearance of the supplied fonts to create a wide variety of font styles.



### Height

Height determines how short or tall your characters appear. Values range from 25 to 100, with 100 being the actual height of the font you selected and 25 being 1/4 of the actual height.



### Preview Box

The Text preview box displays a sample letter "A" in the current font style. The sample letter in the box changes as you select different controls. This allows you to determine if the effect is exactly what you want.



## FONT SETTINGS HINTS AND COMBINATIONS

When using Right justification, be careful not to start your text too far to the left of the canvas. It's easy to misjudge the amount of space the characters need and have text that runs off the screen. If your artwork allows, you may want to type your text with the Text pointer at the far right of the canvas, and then cut and paste your text into place.

A good technique for precisely placing text on artwork is to type the text on a background color that can be turned transparent (the 0 position color on the color palette — usually 0,0,0 black). Save the text as a clipping, load the clipping (with the Transparency icon active) while your artwork is on the screen and then paste the text down in the correct position.

While individually adjusting the width and height of text characters makes the text appear short and fat or tall and thin, selecting values proportional to each other can actually make the text look point sizes smaller.

If you encounter an error message (such as “Too Many Active Characters”) while using the Text function, you must either select the Remove Menu button at the top left of the message box or press Cancel. When the error message disappears, you must press Select to paint down the existing text on the canvas. Move the Text pointer to the next desired position if necessary and continue typing.

**BUZZ  
SAYS**

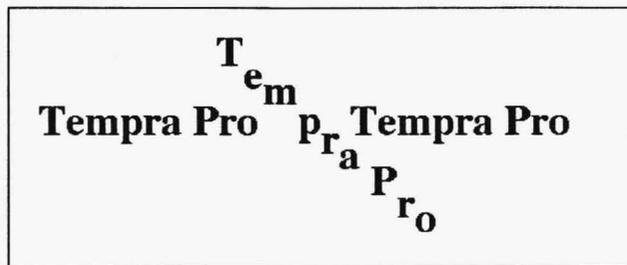


*Combining Text with a color spread, particularly a spread that uses Distance and Fill Object as its Type, produces a shaded, multicolored effect.*



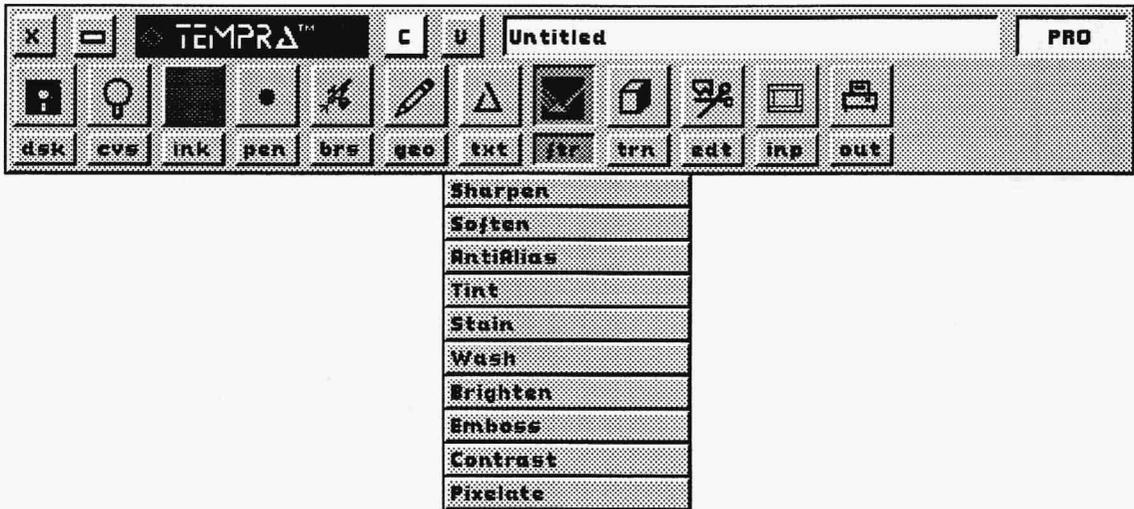
## FONT SETTINGS TUTORIAL

1. Select the TXT functions push-button on the Main Menu Bar to open the Text drop-down menu. Select the Dutch37 font. Then Select Settings to reveal the Font Settings menu. Select No Drop and Left. Width and Height should be set at 100.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select a color from the Ink Color menu that is different from the canvas color.
3. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
4. To type a horizontal line of text, move the cursor to a point on the canvas and press Select. Type "Tempra Pro" on your keyboard. Press Select to paint the text on the canvas.
5. To type an angled line of text, press Select at a new point on the canvas. Move the mouse to stretch an angled baseline. Press Select. The line disappears and the Text pointer returns to the starting point. Type "Tempra Pro." Press Select to paint the text on the canvas.



6. Press Cancel to return to the Main Menu Bar.
7. Try other combinations using the various drop shadows, justifications, X and Y values, and width and height adjustments in the Text function.

# Filter Functions

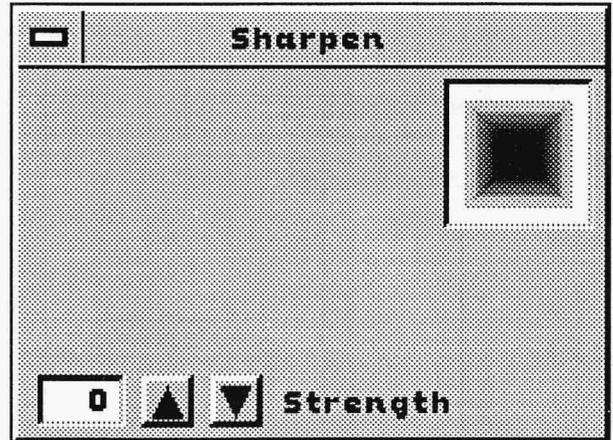


## INTRODUCTION

Filters are effects that are applied to or with colors on the canvas. By using a filter, you can enhance or change your image's contrast, color, and luminance. Some filters have effects that are barely discernible on the canvas. A Soften setting of 1 in an image with many colors may not be as noticeable as a Soften setting of 7.

The filters toggle each other, except for the AntiAlias filter. That is, if Sharpen is active, selecting Tint turns off Sharpen and turns on Tint. However, you can select AntiAlias either alone or with any of the other filters. Unlike most of the other function icons, the Filter functions icons turn on and off (selecting an icon won't automatically open a menu). For instance, if you select the Sharpen filter from the drop-down menu, adjust your value, and apply the filter to your image, the next time you select the Filter drop-down menu or its icon, the filter is turned off. Selecting the menu or icon a third time activates it again. This provides a quick way to turn your filters off without having to open the menu. AntiAlias is the only Filter function that isn't turned off before it can be turned on.

## SHARPEN

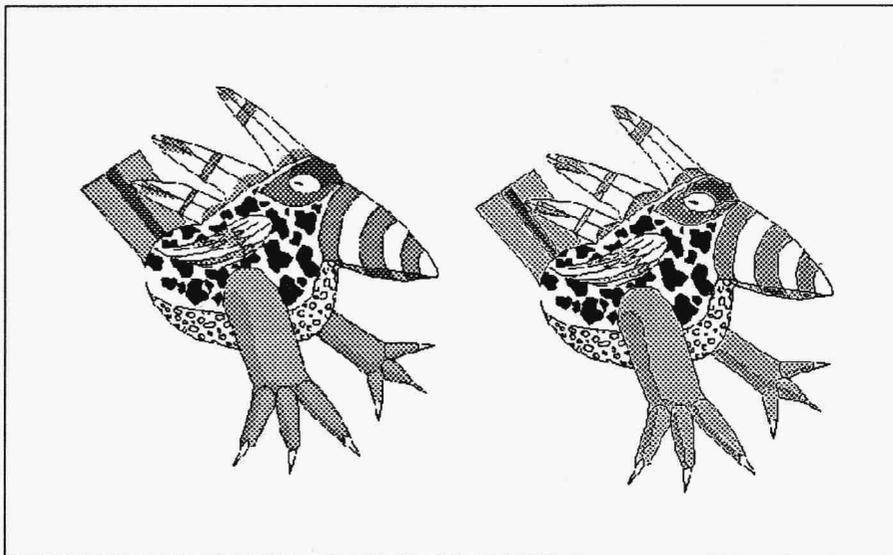


The Sharpen filter enhances the contrast that is already in an image. This filter measures the range of luminance among pixels in an area and enhances the differences between adjacent pixels. Sharpen's effect on an image can range from subtle to radical. Because you can only sharpen an area once, no Continuous button is available in this particular filter. The fine-tuning button adjusts the amount of sharpening applied to an image.

Sharpen can be used with some other functions, such as with parts of the palette locked and with a mask in place. Use the Geometry function to apply the Sharpen filter to your image. Only the area of the image inside that geometry figure is affected by the filter. It is easiest to use the Rectangle tool, but your choice depends on how much of the image you want to sharpen at one time and the shape you want the sharpening to take.



## SHARPEN EXAMPLE

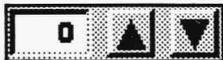


An original image of Buzz on the left and sharpened image of Buzz on the right. The Sharpen strength was set at 8 and applied once.



## SHARPEN CONTROLS

### Strength



The Strength fine-tuning button sets the amount of sharpening you need. The range is from 0 to 8. The lowest number provides the least amount of change, while the larger numbers provide more change to your canvas.

## SHARPEN HINTS AND COMBINATIONS

Although you use the Geometry functions to apply Sharpen to the canvas, the Freehand tool will likely provide poor results unless it is used carefully.

Sharpen is usually applied with low strength settings, such as 1 or 2. Too much sharpening can result in many white or brightly-colored pixels.

Depending on which Geometry function you use to apply the Sharpen filter, you may be able to stop the Sharpen filter as it is applied.

**BUZZ  
SAYS**



*One interesting use of Sharpen is to enhance the appearance of text. If you type text onto a canvas with a contrasting background, you can use Sharpen to highlight the text. After the text is in place, use a filled polygon or rectangle to apply the Sharpen filter to the text. The text will appear outlined with a contrasting color.*

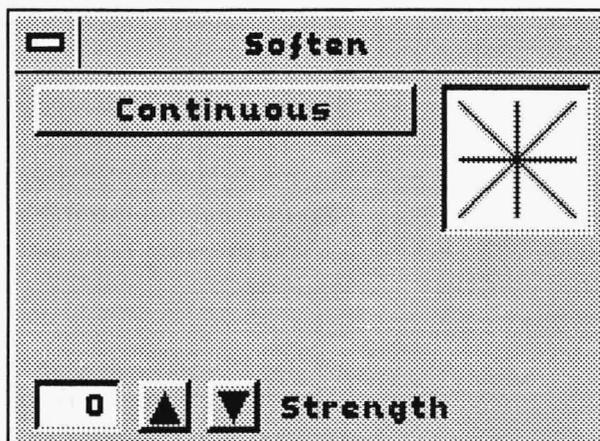


## SHARPEN TUTORIAL

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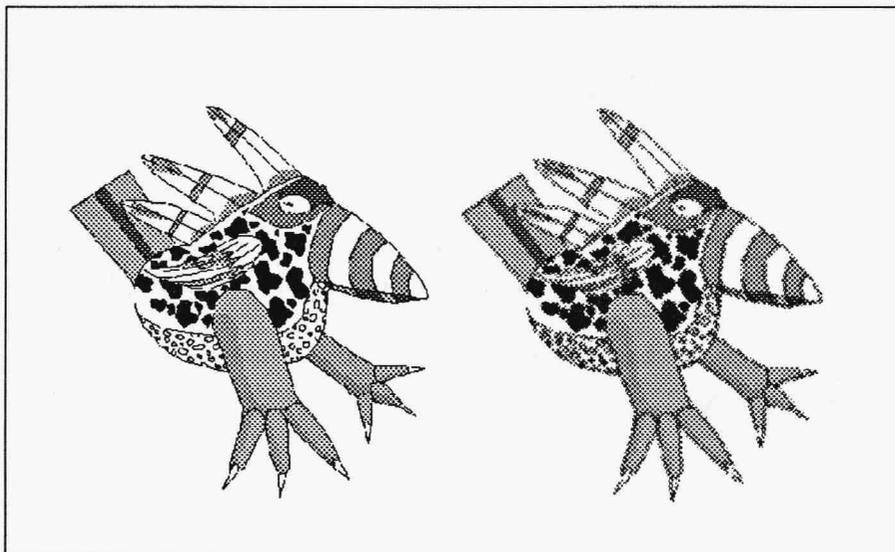
1. Load an image on your canvas.
2. Select the FTR functions push-button on the Main Menu Bar to open the Filter drop-down menu. Select Sharpen from the drop-down menu. Adjust the Strength value to 0 by either placing the cursor in the manual fine-tuning box, pressing Select, typing in the number 0, and pressing Enter or by using the up-and-down arrows beside the box.
3. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Turn on the Filled and Corners controls.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Draw a rectangle on the canvas. The area inside the rectangle will be sharpened.
6. Press Cancel to return to the Main Menu Bar.
7. Try sharpening other parts of the image or change the Strength value and add more sharpening effects to the canvas.

## SOFTEN



The Soften filter adjusts existing colors on your canvas by blending contrasting colors together. Soften does not use the current color from the Ink Color menu. It only affects the colors on your canvas. With Continuous active, you can soften an area of the canvas to the point where there is no difference in the colors of the pixels. This deletes any details in your image. Soften produces a natural effect by blending the hard edges in an image.

You also apply Soften using the Geometry function. The Rectangle tool is easiest to work with, but it depends on the area and extent of softening you want to do.

**SOFTEN EXAMPLE**

An original image of Buzz on the left and a softened image of Buzz on the right. The Soften strength was set at 7 and applied once.



## SOFTEN CONTROLS

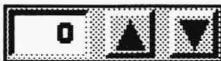
### Continuous



#### Continuous

Continuous controls the number of times you can apply the softening effect to a part of the canvas. When Continuous is turned off, you can only apply Soften to a part of the canvas once. Applying Soften to an area a second time has no effect on the image. When Continuous is active, each application of Soften blends the colors of pixels together. If Soften is applied enough times, the pixels in the area being softened blend to a single color.

### Strength



The Strength fine-tuning button controls the amount of softening applied to an area. The range is from -1 to 7. A strength of -1 provides the least amount of softening, while 7 provides the most.

## SOFTEN HINTS AND COMBINATIONS

Soften blends hard edges of objects with the background. If you use an editing tool to clip an item from the canvas, you can use Soften to blend the edges of the clipping into your image. You may also blend the edge of clippings you load from disk. When you blend in a clipping, it appears to be a part of the original image.

Soften has no effect on an area of the canvas that has a single color. You cannot blend an entire rectangle of a single color into the background. You can blend the edge of the rectangle into the background. This is similar to having the Edge Blend control active with the Rectangle tool in the Geometry function. While the results are equal, you have greater control using the Soften filter.

**BUZZ  
SAYS**



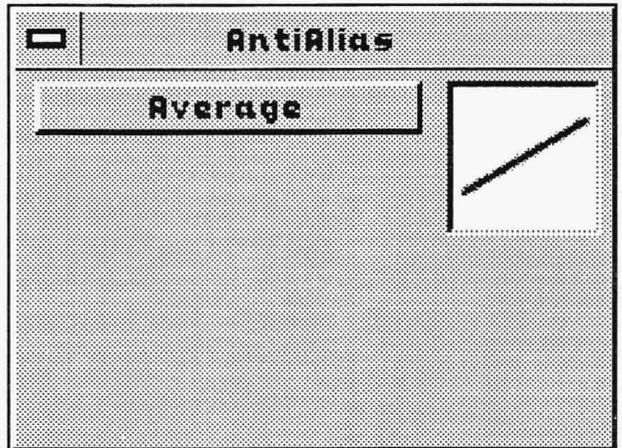
*If Continuous is active, you can apply Soften many times to a single area of the screen. If the area has many different colors, the result is an area that becomes gray. This is what happens if you mix many colors of real paint together.*



## SOFTEN TUTORIAL

1. Load an image with many colors onto your canvas.
2. Select the FTR functions push-button on the Main Menu Bar to open the Filter drop-down menu. Select Soften from the drop-down menu. Go to the Strength fine-tuning button and press Select in the manual fine-tuning box. Using your keyboard, type the number 7 and press the Return or Enter key.
3. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Turn on the Filled and Corners controls.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Draw a rectangle on your canvas. This will soften the canvas area within the rectangle. Press Cancel to return to the Main Menu and select the Filter icon to turn off Filter. Press Filter again to return to the Soften menu. Adjust the Strength fine-tuning button to 1.
6. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
7. Draw another rectangle over a different area of the canvas and observe the different amounts of Soften you have applied to your image. Also try applying Soften with Continuous active.

## ANTI\_ALIAS

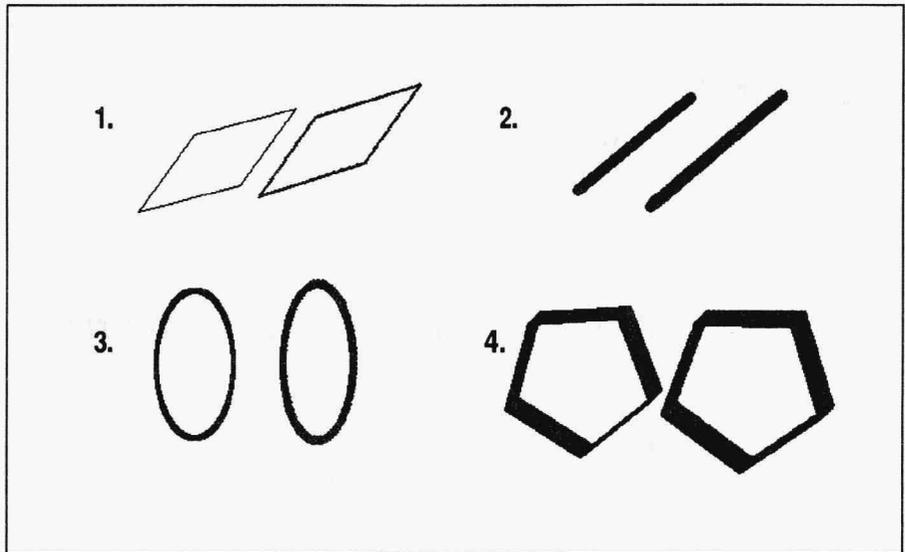


The AntiAlias filter makes angled lines appear smooth. A line painted onto the canvas at an angle appears jagged. This jaggedness is called aliasing. AntiAlias blends the color at the edge of the line with the background color.

The AntiAlias filter works differently from the other filters. It cannot be used alone to change angled lines or images already on the canvas. Instead, you use AntiAlias as you paint. You choose the AntiAlias filter and the Geometry function you want to paint with, and then you paint on the canvas. You cannot go back to an image already on the canvas and use AntiAlias.



## ANTI\_ALIAS EXAMPLES



1. A Parallelogram drawing using the smallest pen, without and with AntiAlias.
2. A Line drawing using the smaller round pen, without and with AntiAlias.
3. An Ellipse drawing using the small square pen, without and with AntiAlias.
4. A Regular Polygon drawing using the slanted pen, without and with AntiAlias.



## ANTIALIAS CONTROLS

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### Average



**Average**

AntiAlias has one control, Average, that is always active and cannot be changed. It is included on this menu to show how AntiAlias smooths jagged lines: by averaging the color in the line with the background.

## ANTIALIAS HINTS AND COMBINATIONS

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AntiAlias works best on lines drawn at an angle. With the Geometry figures, lines appear thicker after AntiAlias has been applied. This is part of the smoothing effect AntiAlias has. Try AntiAlias with Text. Text appears smoother and blends in better with your background when AntiAlias is active.

You can combine AntiAlias with other filters, such as Tint. If you try to turn off AntiAlias by selecting the Filter icon and the icon remains pink instead of turning gray, you probably have another filter activated as well. Check your drop-down menu to see which filters are turned on.

The AntiAlias effect occurs right after the paint is applied to the canvas. You can watch the effect of AntiAlias on an angled line when you paint it onto your canvas. First the line is painted onto the canvas. Then the AntiAlias filter is applied to the line in the same direction.

**BUZZ  
SAYS**

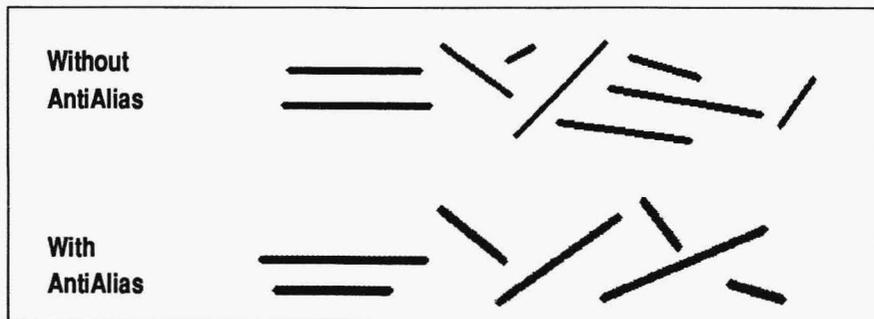


*Buzz says he always uses the AntiAlias filter with text. It makes text look natural and less like computer text.*

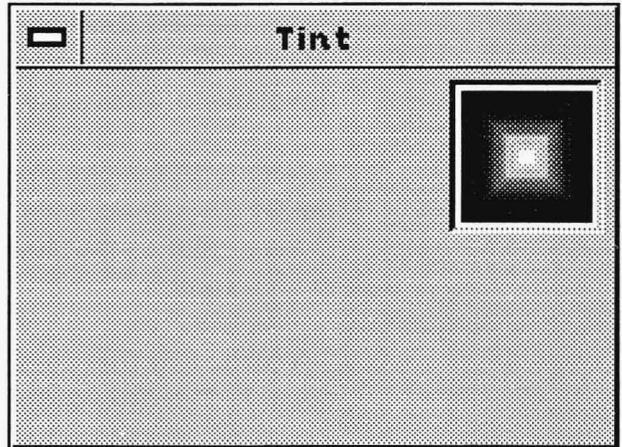


## ANTIALIAS TUTORIAL

1. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Line from the drop-down menu. Turn off all buttons on the Draw Lines menu.
2. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Select a color on the Palette that is different from the background of your canvas.
3. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a pen.
4. Select the FTR functions push-button on the Main Menu Bar to open the Filter drop-down menu. Select AntiAlias. The AntiAlias menu appears with Average active.
5. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
6. Move to a point on the canvas and press Select. Stretch out a horizontal line. Press Select to paint the line on the canvas. Notice that the line required very little antialiasing.
7. Make a new line stretched at an angle and press Select to paint the line. Notice that this line required more antialiasing and appears smoother than a line drawn at the same angle without AntiAlias.



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**TINT**

Tint, used to change the color of areas on the canvas, is probably the most subtle of all the filters. This filter changes color without changing the overall brightness of the area being painted. Tint changes either the background color or color on images already on the canvas. Tint has little effect on black or dark images since dark areas have very little color to change. The opposite is true of light objects. A light object can be tinted with the current color.

Use the Geometry functions to apply Tint to an image or background color. The specific tool you choose depends on how much of the image you want to tint and the shape you want the tint to have.

Tint has no controls.



## TINT HINTS AND COMBINATIONS

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You can use Tint with Mask to limit the areas that receive tinting. Tint is active on the canvas and in the Zoom box. You can use Tint while in Zoom to see it as it works on each individual pixel.

You can apply tint with a pattern or color spread. This has the effect of tinting the image with a range of colors.

**BUZZ  
SAYS**



*If you have a high-color or true-color board with 32,000 or 16 million colors, Tint works much better than on a 256-color display board. Tint still works on a 256-color board, but not as nicely.*

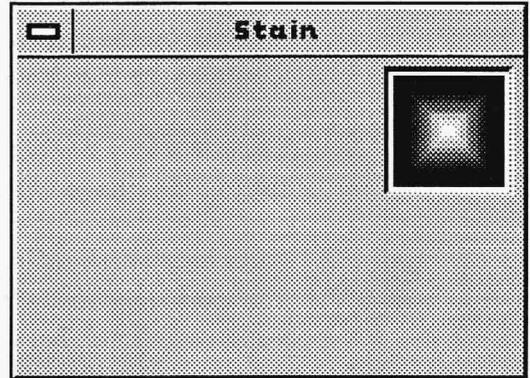
## TINT TUTORIAL

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1. Load an image with many colors onto your canvas.
2. Select the FTR functions push-button on the Main Menu Bar to open the Filter drop-down menu. Select Tint from the drop-down menu.
3. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Turn on the Filled and Corners controls.
4. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background.
5. Press Cancel on the mouse to clear the Main Menu Bar from the screen. Draw a rectangle on the canvas. The area inside the canvas will be tinted with the current color. Press Cancel to return to the Main Menu Bar.
6. Select a different color on the Ink Color menu. Press Cancel to remove the Main Menu Bar from the canvas. Tint the same area on the canvas with the different color.

## STAIN

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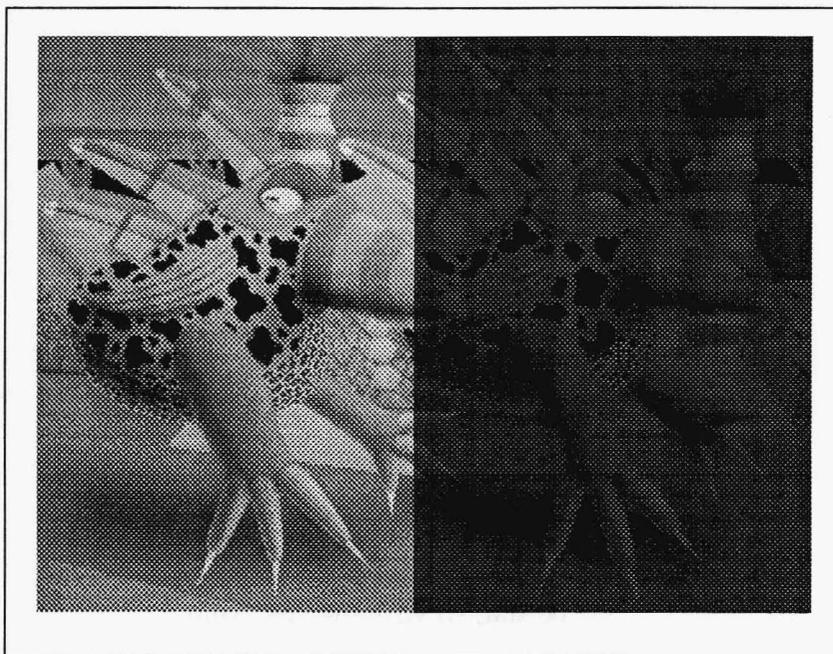
Stain allows you to add a stain of color over an image while keeping the “texture” of the image. Stain is equivalent to placing a color piece of plastic film over an image.

Use the Geometry function to apply Stain to the canvas. The specific tool you choose depends on the amount of canvas you want to wash at one time and the shape you want the stain to have.

Stain has no controls.



## STAIN EXAMPLE



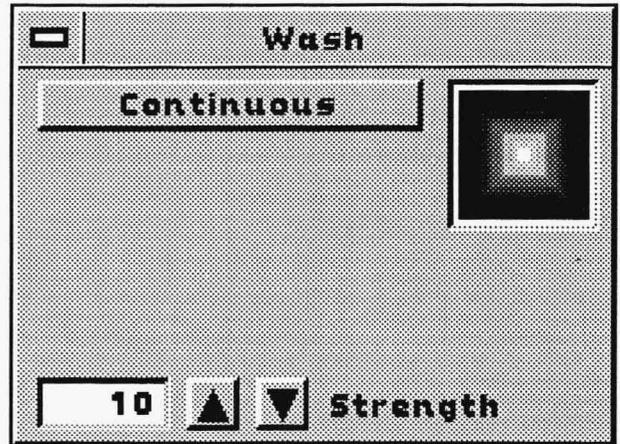
An original image of Buzz and Sharp Boy on the left and a stained image of Buzz on the right. You can still see the original image behind the stain. This filter is more effective in color.

**STAIN TUTORIAL**

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1. With an image on screen, move to the GEO drop-down menu and select Rectangle. Be certain Filled is active
2. Move to the FTR drop-down menu button and press Select. The Filters drop-down menu opens. Select the Stain button. The Stain menu appears.
3. Cancel to remove the menus from the screen.
4. Using the filled rectangle, draw a rectangle onto the screen. When the rectangle is complete, the area inside the rectangle is stained.
5. Use the F2 key to select a different color by pointing the cursor to another color on the image.
6. Draw a second rectangle on the screen. When it is complete, it will be stained with the new color.

## WASH

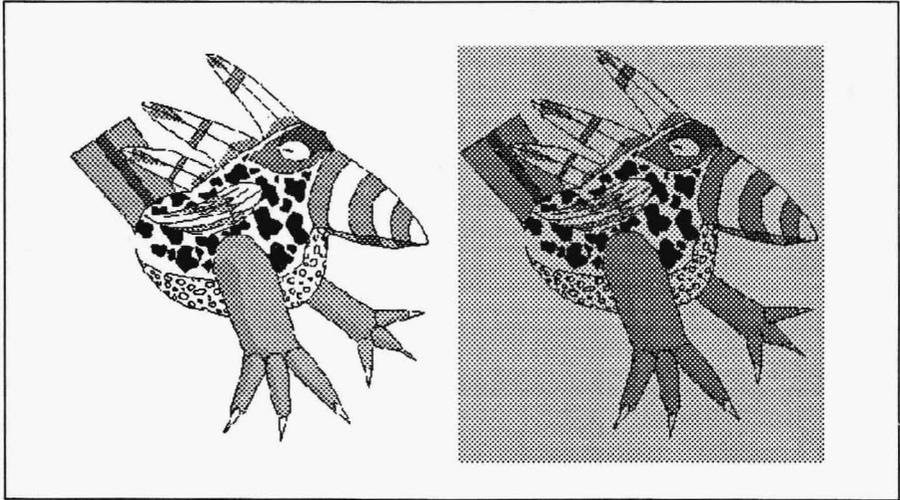


Wash blends the current color with the colors on the canvas. This filter applies a layer of color as if it were washing over the areas on the canvas. The Wash controls let you determine how much color is washed onto the canvas and whether you can wash an area of the canvas more than once.

Use the Geometry function to apply Wash to the canvas. The specific tool you choose depends on the amount of canvas you want to wash at one time and the shape you want the wash to have.



## WASH EXAMPLE



An original image of Buzz on the left and a washed image of Buzz on the right. The Wash strength was set at 25 and applied once to the image. The image is visible behind the wash of color.



## WASH CONTROLS

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### Continuous



**Continuous**

Continuous determines how often you can apply a single application of Wash to the canvas. If Continuous is active, you can wash the same area of the canvas many times. Each application blends more of the current color onto that area of the canvas. If Continuous is not active, you can apply only one coat of Wash at a time to an area of the canvas. However, if you leave the canvas and return to the Main Menu Bar, you can apply a second coat of Wash to an area.

### Strength



**10**

The Strength fine-tuning button controls the amount of Wash applied to the canvas for each coat. The range is from 10 to 100. A value of 10 applies very little color to the canvas. A value of 100 replaces the area being washed with the current color. The preview box in the menu displays the strength of the wash so you can determine if that value is too strong or weak.

## WASH HINTS AND COMBINATIONS

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Wash provides an easy way to alter the colors on the canvas while controlling the amount of color that is changed. You can combine Wash with a color spread or a pattern. This has the effect of washing a range of colors over an area.

**BUZZ  
SAYS**



*Tint and Wash are different. Try each one on the same image and see which you like best.*

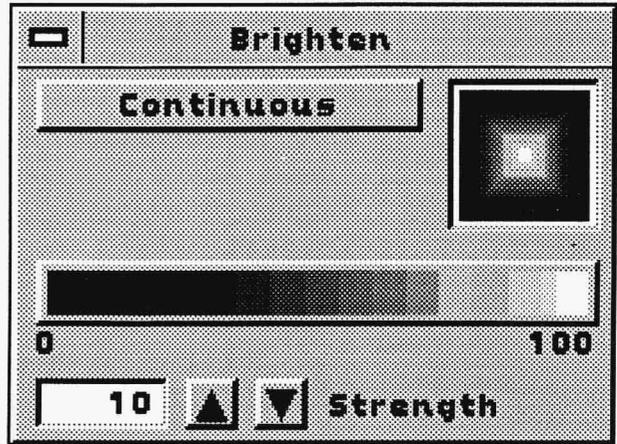


## WASH TUTORIAL

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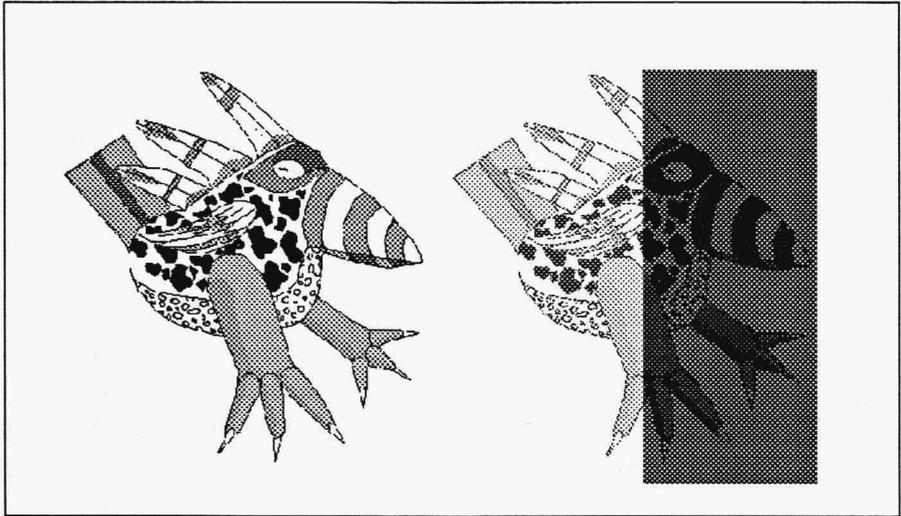
1. Load an image with many colors onto your canvas.
2. Select the FTR functions push-button on the Main Menu Bar to open the Filter drop-down menu. Select Wash from the drop-down menu. Adjust the Strength fine-tuning button by typing in the number 45 or by using the up-and-down arrows until the value is set at 45.
3. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Turn on the Filled and Corners controls.
4. Select the INK functions push-button on the Main Menu Bar to open the Ink drop-down menu. Select a color on the Palette in the Ink Color menu that is different from the background.
5. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
6. Draw a rectangle around an area on the canvas that has colors different from the current color. Notice the wash of new color on the image.
7. Press Cancel to return to the Main Menu Bar.
8. Select a different color in the Ink Color menu. Press Cancel to clear the Main Menu Bar from the screen.
9. Wash the same area on the canvas with the different color.

**BRIGHTEN**



The Brighten filter changes the brightness of an area on the canvas. The shade can be either light or dark. This means the Brighten filter can actually be used to lighten or darken areas of your canvas. Using the controls, you can set the amount of Brighten you apply to the canvas and the darkness or lightness of the filter. You can also determine if the application of Brighten is continuous.

You apply Brighten to the canvas by using the Geometry functions. The particular tool you choose depends on the amount of canvas you want to brighten at one time and the shape you want the Brighten to have.

**BRIGHTEN EXAMPLE**

An original image of Buzz on the left and a brightened image of Buzz on the right. The Brighten strength was set at 50, with the left half of the brightened image set at the white side of the Dark-to-Light bar and the right half set at the black side of the bar.



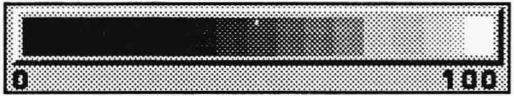
## BRIGHTEN CONTROLS

### Continuous



Continuous determines how often a single application of Brighten is applied to the canvas. If Continuous is active, you can brighten the same area of the canvas many times. Each application adds more of the Brighten effect to that area of the canvas. If Continuous is inactive, you can only brighten an area of the canvas once without returning to the Main Menu Bar first.

### Dark-to-Light Bar



The Dark-to-Light bar sets the shade used by the Brighten filter. You can set this bar by moving the cursor onto the bar and pressing Select. The red marker showing the current shade jumps to the new location. If the Dark-to-Light bar is set on white, Brighten adds white to the paint on the canvas, which brightens the paint. If the bar is set to black, Brighten adds black to the paint on the canvas and makes it appear darker.

### Strength



The Strength fine-tuning button controls the amount of Brighten applied to the canvas. The range is from 10 to 100. A value of 10 applies very little of the Brighten effect to the canvas. A value of 100 changes the paint on the canvas dramatically.

## BRIGHTEN HINTS AND COMBINATIONS

Brighten does not use a color, pattern, or spread. Nor does Brighten add or blend paint onto the canvas. Brighten changes paint already on the canvas. The filter has no effect if you try to brighten a white area of the canvas with the Dark-to-Light bar set at white or a black area of the canvas when the Dark-to-Light bar is set to black.

**BUZZ  
SAYS**

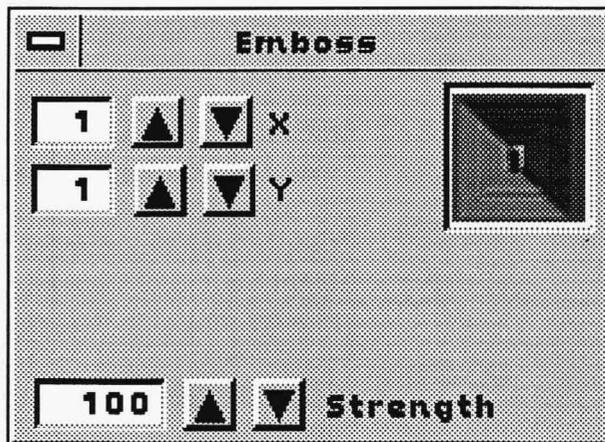


*You can use Brighten to simulate shadows. Use the darker portion of the Light-to-Dark bar for shaded areas of your image and the lighter portion of the bar for lighter areas.*



## **BRIGHTEN TUTORIAL**

1. Load an image with many colors on your canvas.
2. Select the FTR functions push-button on the Main Menu Bar to open the Filter drop-down menu. Select Brighten from the drop-down menu. Select Continuous. Adjust the Strength fine-tuning button by using the up-and-down arrows until the value is set at 25, or simply type the number 25 in the Strength box. At the Dark-to-Light bar, select the white area at the right side of the bar. (The red marker moves to that area.)
3. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Turn on the Filled and Corners controls.
4. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
5. Draw a rectangle around an object on the canvas. Notice the brightness of the image. Apply Brighten to the original area a second time. Notice that the brightness of the area changes again.
6. Press Cancel to return to the Main Menu Bar.

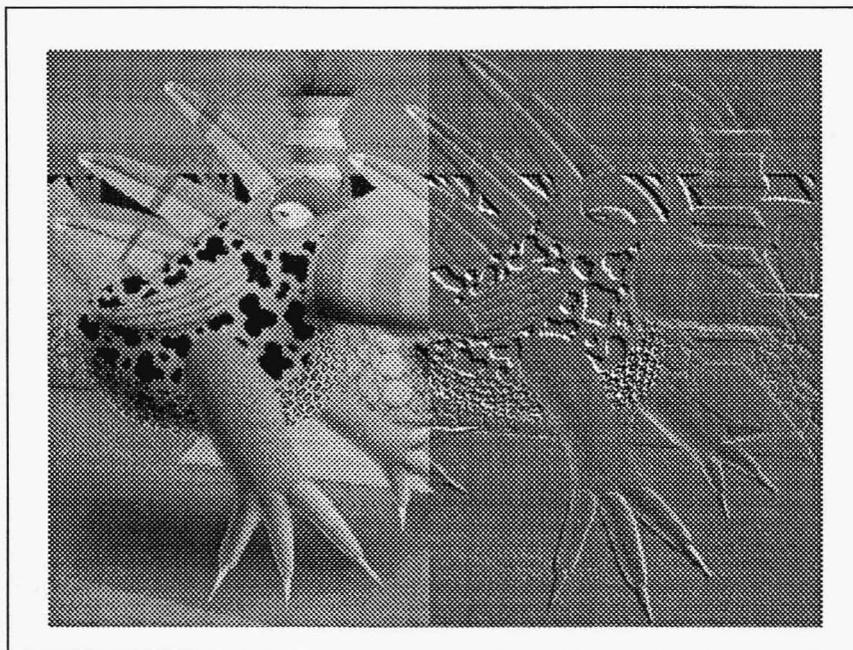
**EMBOSS**

Emboss produces an embossed look for an image by emphasizing the differences in the luminance between adjacent pixels and removes the color in the image. The depth of the emboss depends on the X and Y values you set.

Use the Geometry function to apply Emboss to the canvas. The specific tool you choose depends on the amount of canvas you want to emboss at one time and the shape you want the emboss to have.



## EMBOSS EXAMPLE



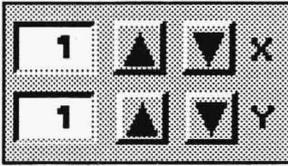
An original image of Buzz and Sharp Boy on the left and an embossed image of Buzz on the right. The Emboss strength was set at 100 and the pixel setting was at 1 for Y and 1 for X and applied once to the image.



## EMBOSS CONTROLS

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### Emboss Depth



The depth of the emboss is determined by the setting of the X and Y values. The range is 1 to 5. The higher the number the larger the difference in luminance between the pixels.

### Strength



The strength of the emboss determines how dark or solid the emboss will be. The range is from 10 to 100.

## EMBOSS HINTS AND COMBINATIONS

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Emboss works best on black and white images. However, you can create some neat effects using emboss on color images that have a lot of contrasted colors. The areas that would normally be white in the emboss are the various colors in the image.

Try using Emboss with the Fill tool to create an interesting effect.

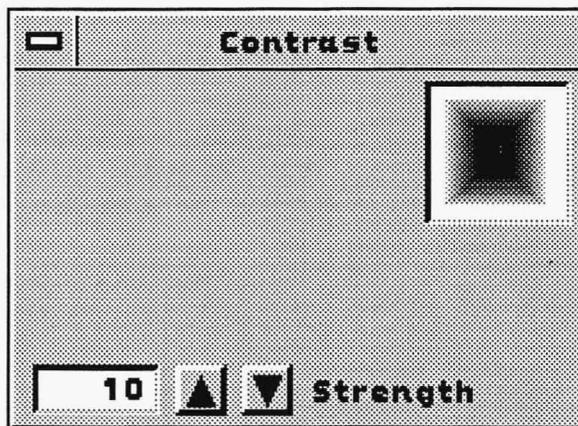
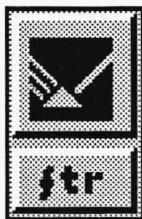


## **EMBOSS TUTORIAL**

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1. With an image on the screen, choose the FTR drop-down menu button. The Filters drop-down menu appears.
2. Select Emboss to open the Emboss menu. Using the fine-tuning buttons, adjust the X and Y values to their maximum values. Adjust the Strength to its maximum value.
3. Move to the GEO drop-down menu button and press Select. Choose Rectangle from the drop-down menu and Filled in the Rectangle menu.
4. Press Cancel to remove the menus and go to the screen.
5. Draw a rectangle on an area of the image. When the rectangle is complete, it will have the Emboss filter applied to it.

## CONTRAST

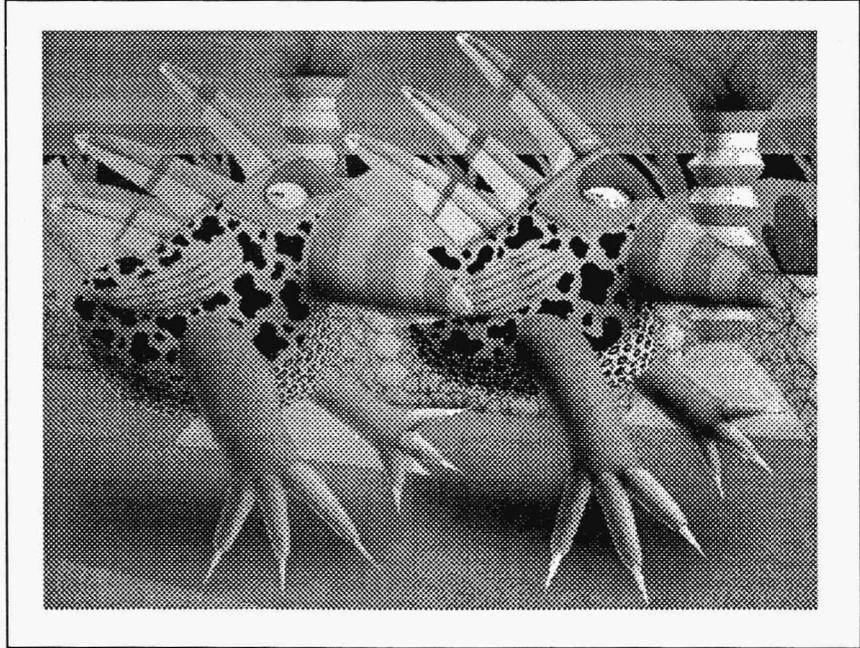


Contrast emphasizes the contrast between pixels. Lighter color pixels are shifted toward the white color spectrum and dark color pixels are shifted toward the black end. The Contrast filter is great for improving the color quality of washed-out images, scans, and video captures.

Use the Geometry function to apply Contrast to the canvas. The specific tool you choose depends on the amount of canvas you want to contrast at one time and the shape you want the contrast to have.



## CONTRAST EXAMPLE



An original image of Buzz and Sharp Boy on the left and a contrasted image on the right. The Contrast strength was set at 25 and applied once to the image.



## CONTRAST CONTROL

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### Strength



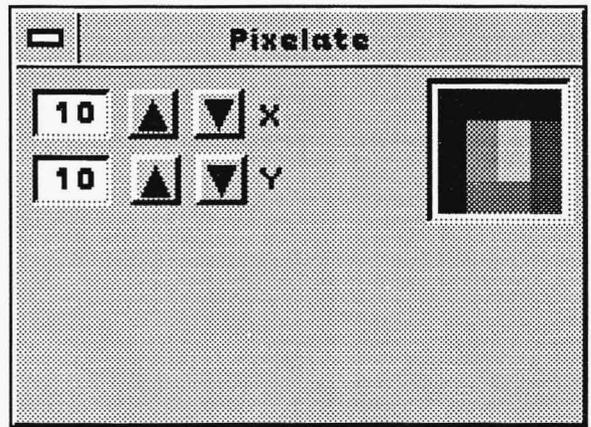
The strength of the contrast determines the differentiation between the dark and light pixels. The range is from -25 to 25.

## CONTRAST TUTORIAL

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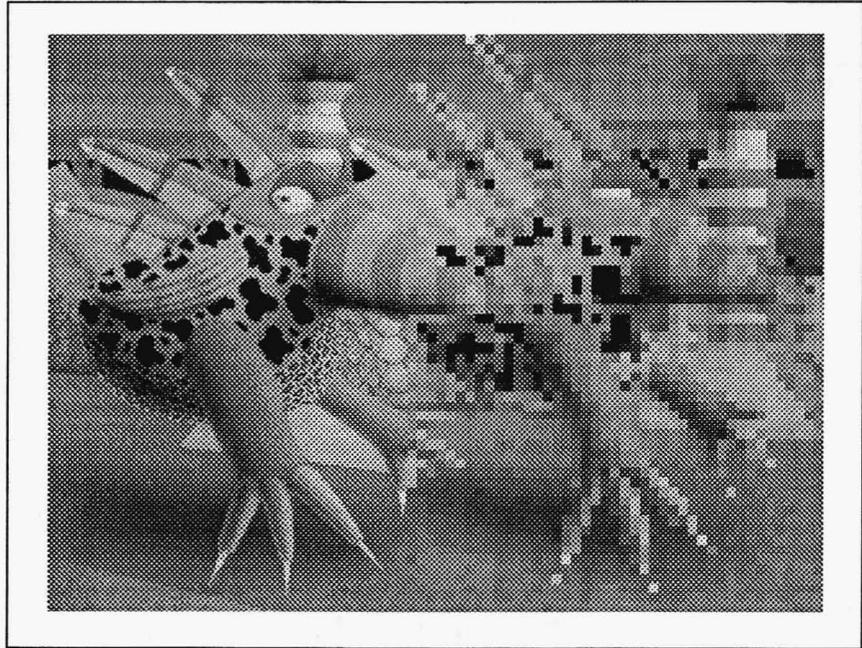
1. With an image on the screen, choose the FTR drop-down menu button. The Filters drop-down menu appears.
2. Select Contrast to open the Contrast menu. Using the fine-tuning buttons, adjust the Strength to its maximum value.
3. Move to the GEO drop-down menu button and press Select. Choose Rectangle from the drop-down menu and Filled in the Rectangle menu.
4. Press Cancel to remove the menus and go to the screen.
5. Draw a rectangle on an area of the image. When the rectangle is complete, it will have the Contrast filter applied to it.

**PIXELATE**



Pixelate provides an enhanced pixelated look to an image. The larger the X and Y values, the larger the pixels appear. This filter can give you an interesting “abstract” look to your image.

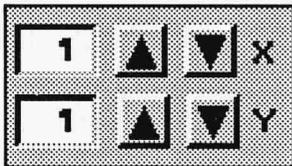
Use the Geometry function to apply Pixelate to the canvas. The specific tool you choose depends on the amount of canvas you want to pixelate at one time and the shape you want the pixelate to have.

**PIXELATE EXAMPLE**

An original image of Buzz and Sharp Boy on the left and a pixelated image on the right. The Pixelate values were set at 5 for X and 5 for Y and applied once to the image.

## PIXELATE CONTROL

### Pixelate Depth



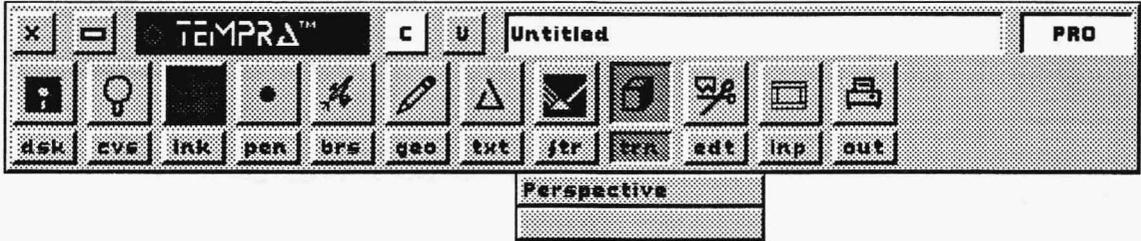
The depth of the pixelation is determined by the setting of the X and Y values. The range is 1 to 10. The higher the number the larger the pixels.

## PIXELATE TUTORIAL

1. With an image on the screen, choose the FTR drop-down menu button. The Filters drop-down menu appears.
2. Select Pixelate to open the Pixelate menu. Using the fine-tuning buttons, adjust the X and Y depths to a value of 5.
3. Move to the GEO drop-down menu button and press Select. Choose Rectangle from the drop-down menu and Filled in the Rectangle menu.
4. Press Cancel to remove the menus and go to the screen.
5. Draw a rectangle on an area of the image. When the rectangle is complete, it will have the Pixelate filter applied to it.

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# Transformation Functions

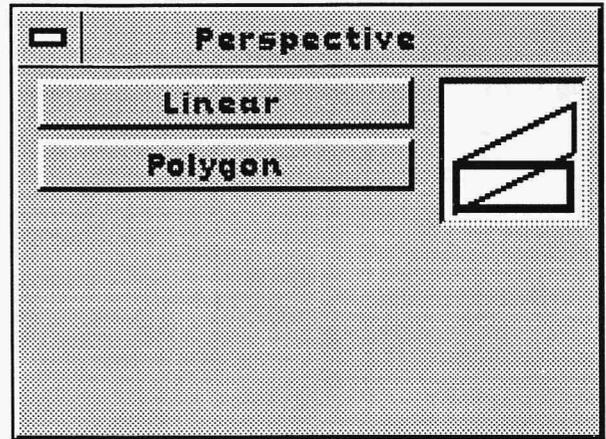
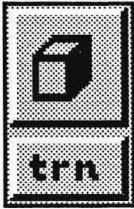


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## INTRODUCTION

The Transformation function skews, warps, and distorts areas of your canvas. You can use this function to give textures and objects a three-dimensional appearance. You can warp an entire image or a piece of that image. You can copy an area and then warp it, leaving your original artwork. You can add perspective to any design you create or scan into TEMPRΔ PRO — text, photorealistic images, and paintings, among many other possibilities.

## PERSPECTIVE



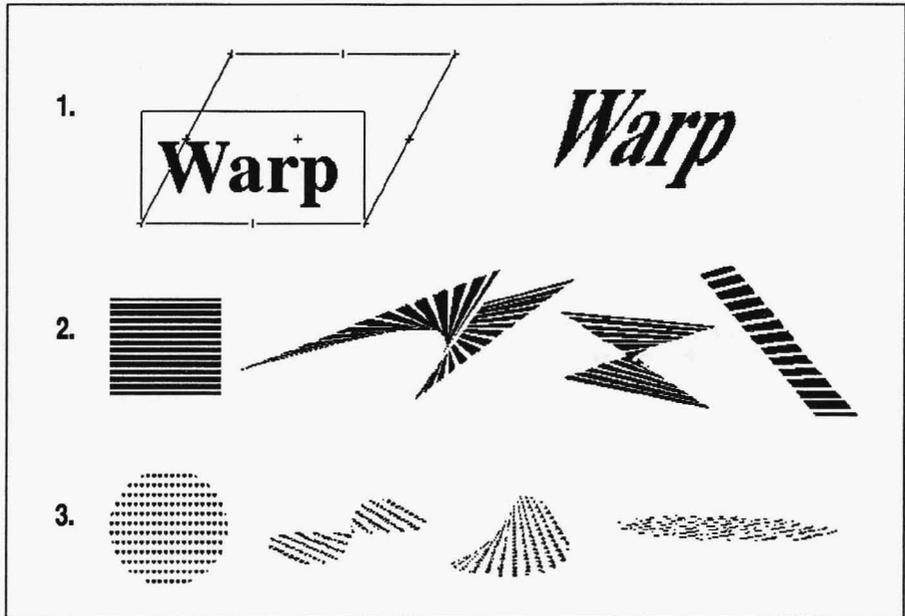
Perspective is the function you use in Transformation to manipulate an image or portion of an image to create a three-dimensional perspective. This function works alone: you do not need to use Geometry, Edit, or any other functions with Perspective.

When Perspective is active, you draw a rectangle over the image or portion of the canvas you want to warp. Press Select at the top left corner of the area to be warped and move the mouse to draw a ghost rectangle. Press Select again and the rectangle displays control points (“+” signs). The cursor turns into a Pick icon. Position the Pick icon over a control point. Press and hold the Select button while you drag the mouse on the canvas. You can reposition the control points on the canvas as many times as you want before you paint the warped image. Although you can see the ghost rectangle reposition itself as you move the control points, you will not see the effects you are creating until the image is painted on the canvas. Press Cancel to paint.

To make a copy of an area to warp, press and hold the Select button over the control point (“+” sign) in the middle of the rectangle. Drag the rectangle to another location on the canvas and release the Select button. The ghost rectangle is still there, so you can warp the copy of image at that point. Your original is where you left it.



## PERSPECTIVE EXAMPLES



1. Original text with Perspective ghost rectangle and warped text.
2. Original Rectangle drawing and various perspectives.
3. Original Circle drawing and various perspectives.



## PERSPECTIVE CONTROLS

### Linear

#### Linear

Linear lets you create warped images using straight lines (the sides of the rectangle) rather than curved lines. Because you are working with a rectangular linear perspective, you will always have four corners in your ghost rectangle, even if the shape itself does not resemble a rectangle.

### Polygon

#### Polygon

Polygon lets you create warped images based on a polygon. You can trace around the exact area you want to warp, which gives you more control in the area to be transformed when it is not a rectangular area.

## PERSPECTIVE HINTS AND COMBINATIONS

Perspective warps any area of the image in the ghost rectangle. You are not limited to a simple four-sided figure. You can wrap the ends of the rectangle to create bow-tie shapes. As the warped area fills in, the paint flows across the area created using Perspective.

You can cancel any time while manipulating the control points for Perspective. However, once the ghost rectangle with the control points is in place, canceling paints the image on the canvas.

If you warp a copy of an area, you may want to make sure the copy is far enough away from the original and that no sides or control points of the ghost rectangle touch the original. This prevents any portion of the original from inadvertently being painted over.

You can continue to turn the area of the canvas, picking up and moving control points until the area is upside down or backwards.

**BUZZ  
SAYS**

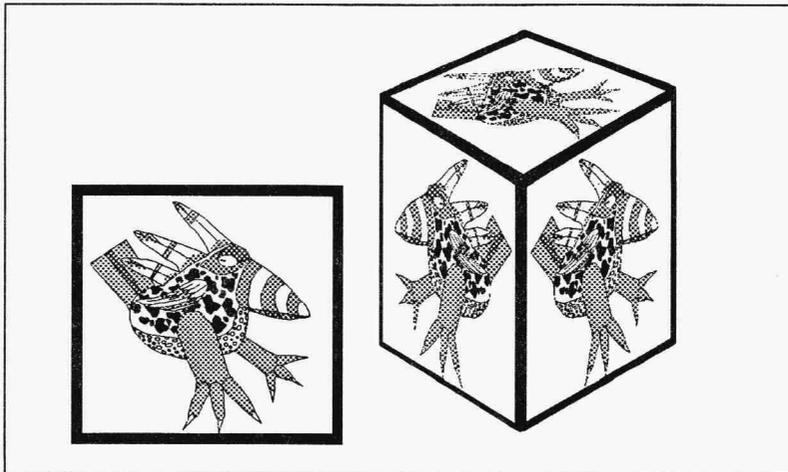


Create "italicized" text by warping the text into a slant to the left or right.



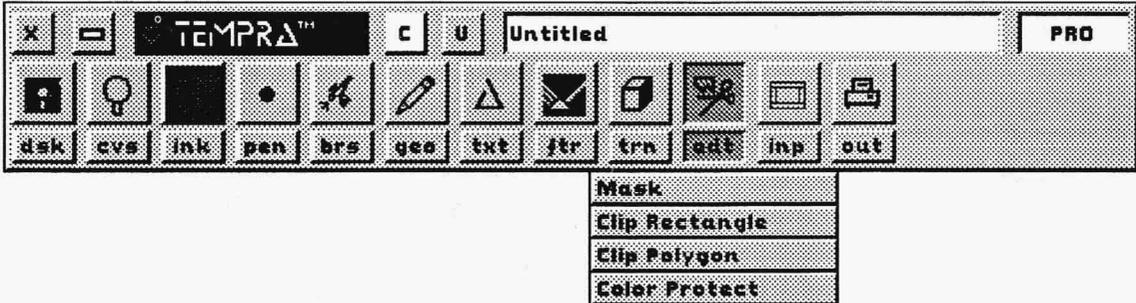
## PERSPECTIVE TUTORIAL

1. Load an image on your canvas.
2. Select the TRN functions push-button on the Main Menu Bar to open the Transformation drop-down menu. Select Perspective from the drop-down menu. Linear is already active.
3. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
4. Press Select at the top left corner of a portion of the image. Move the mouse to draw a ghost rectangle. Press Select again to reveal the control points on the rectangle.
5. Select various control points on the ghost rectangle and move the control points on the canvas to create a warped image. (Press Select once to grab a control point, then press Select again to nail that control point in place and grab another one.) Press Cancel to paint the image on the canvas.



6. Press Cancel to return to the Main Menu Bar.

# Edit Functions



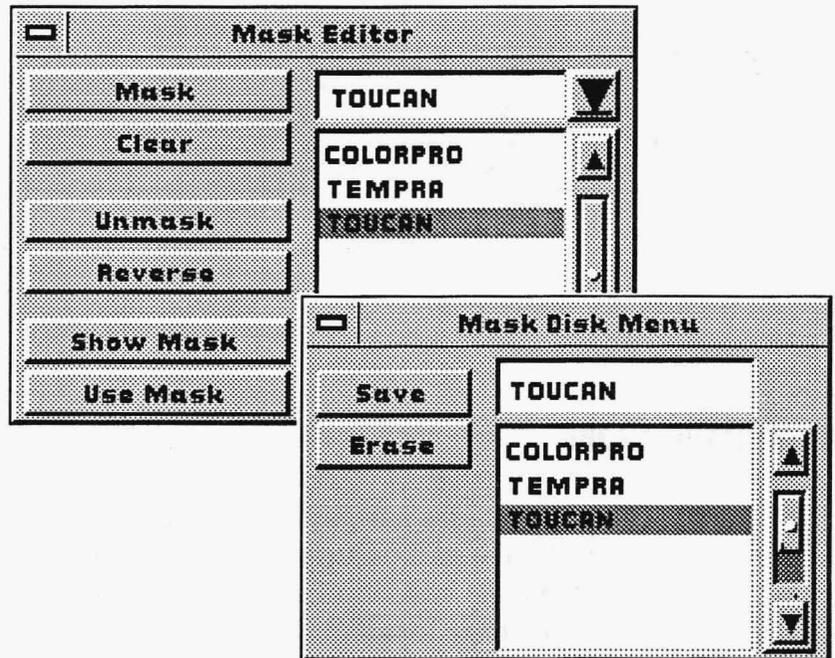
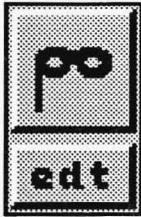
## INTRODUCTION

Edit includes four functions that allow you to perform two distinct tasks: cut and paste and protection of canvas areas. Using the Clip Rectangle and Clip Polygon functions, you can cut clippings from your image, manipulate and/or move them, and paste them back onto your image. The clippings you cut from your background can be pasted as many times as needed. Clippings cut from the image in the Edit functions are similar to the clippings TEMPRA PRO loads and saves in the Files menu.

You can protect parts of your image from being painted over. With the Mask and Color Protect functions, you can protect either a physical area of the image or selected colors on the image. The areas you want protected can be saved to disk for later use. It is not always possible to see on the Main Menu Bar if protection is in operation. The protection functions can be combined with other functions on the Main Menu Bar and remain active until they are turned off.

The Edit functions, like some other TEMPRA PRO functions, can be applied only to the screen display area of your canvas. Therefore, if your canvas is larger than your screen or resolution, you may need to use the canvas slider bars to move to the next screen area to continue using the Edit function.

## MASK EDITOR



Using the Mask Editor menu, you can create a barrier that prevents you from painting over parts of an image. You must create or apply the mask before you can use it. You create a mask with any of the functions you use to paint. You can apply Mask with filled and outlined Geometry functions and other functions like Fill and Zoom. As you apply the Mask, the screen shows the area being protected. You can apply Mask to the image and then reverse the process by using Unmask. Unmask removes a mask that has already been applied to the image.

Once you've created the mask to protect areas of the image you don't want painted, you can use the mask. When Use Mask is active, you stop applying Mask and start using the barrier to protect your image as you paint. The mask does not need to be visible for you to use it. The Show Mask button allows you to either reveal the mask or hide the mask while you paint.



Mask prevents you from painting over protected areas. However, Mask doesn't protect an area from being edited (or "clipped") with Clip Rectangle or Clip Polygon. If Clip Rectangle or Clip Polygon is active, you cannot use Mask. If Mask is active you cannot use the Clip functions.

Because a mask can be treated as a file as well as a protection function, you can load, save, and erase a mask. To load a mask file, simply select the filename from the list box in the Mask Editor menu. To save the mask you are using, select the pull-down menu button (the underlined arrow) to open the Mask Disk menu. Select the filename box in the Mask Disk menu. The box changes color. Type in the name of your file for that mask and press Enter. Select Save. The name of your new file appears in the list box. You can also erase mask files in the Mask Disk menu. To erase a mask, select the filename of the mask to be erased from the list box in the Mask Disk menu. The filename is highlighted in the list box. Then select Erase. Before you can erase, a message box appears to confirm deletion of the file you have selected. When you are finished in the Mask Disk menu, press either Cancel or the Remove Menu button to return to the Mask menu.

## MASK EDITOR CONTROLS

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### Mask



Selecting the Mask button allows you to apply a mask to your image. You perform the same tasks to create a mask as you do to paint. Use any of the Geometry functions to apply a mask. You can also use Fill, Zoom, and Text to apply a mask. Functions like Pattern and the Filters have no effect when applying a mask. As you apply the mask, you can see the change in areas that have been masked. Your current color has no effect when applying a mask; TEMPRA PRO automatically applies a contrasting mask color to each masked pixel. The Mask and Use Mask buttons can't be depressed at the same time.

### Clear



Clear erases an existing mask from your image. You can then apply another mask or not use the Mask function at all.

### Unmask



Unmask produces the opposite effect of the Mask button. With Unmask active, painting actions remove mask from the image. If there is no mask on the canvas, painting has no effect. You can use the Unmask button to remove a mask from areas where you don't need it.

### Reverse

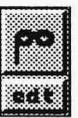


The Reverse button reverses the effect of the Mask. That is, areas that were protected by a mask are no longer protected and areas that weren't protected are protected. When Reverse is selected, the reversal of the mask occurs immediately. You can continue using the mask as you paint, you can apply more mask, or you can use the UnMask button to remove the mask from the canvas.

### Show Mask



Show Mask lets you see the mask on the canvas as you paint. The masked area of the image looks like a color overlay. The mask is invisible when the Show Mask button is inactive. You can use the Mask function even if the mask is invisible. Show Mask is only functional when Use Mask is active. Show Mask is unavailable when Mask is active because the mask is automatically visible when you apply it.



## Use Mask



Use Mask provides the mask protection when you paint. It prevents paint from flowing onto the canvas in the masked areas. Use Mask may be active with or without Show Mask.

## Pull-down Menu Button



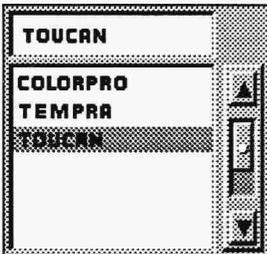
The Mask Editor pull-down menu button (the underlined arrow to the right of the filename box) lets you access the Mask Disk menu.

## List Box



The Mask Editor list box contains an alphabetical listing of Mask files that are saved on your disk. Mask files are standard DOS files and have a ".MSK" extension. You can select a file from the list box to load as the current mask. The file you select is highlighted in the list box, displayed as the current file in the filename box, and loaded onto the screen. The elevator bar and buttons become active only when the list of mask files is too long to fit on a single list box page.

## Mask Disk Menu List Box



The Mask Disk menu, which is the Mask pull-down menu, also has a filename box and a list box. The file displayed in the filename box and highlighted in the list box is the file you will either save or erase. You can either type a new name in the filename box for your file or select a file from the list box to be saved. The list box only displays Mask files.

## Mask Disk Menu - Save



The Save button in the Mask Disk menu allows you to store a mask you have created in a file on disk. Only mask files are saved with this button.

## Mask Disk Menu - Erase



The Erase button in the Mask Disk menu allows you to delete mask files. Before you erase, a message box appears to confirm the deletion. Only mask files can be erased with this button.



## MASK EDITOR HINTS AND COMBINATIONS

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When you clear the screen using the Clear button on the Main Menu Bar, everything disappears from the canvas *except* the mask. You must use the Clear button in the Mask Editor menu to clear the mask from the screen.

TEMPRA PRO will “remember” your mask even between TEMPRA PRO sessions unless you clear the mask before exiting the program. If you don’t clear the mask, when you exit TEMPRA PRO, re-enter and load an image, and then select Mask, the mask from your previous session will reappear on your screen.

The Undo button on the Main Menu Bar has no effect while Mask is active — Mask features Clear, Unmask, and Reverse make Undo unnecessary.

### BUZZ SAYS



*Airbrush artists use a mask to give a hard edge to their airbrush. That way they can make a number of passes with the airbrush to get the right amount of paint without having to worry about edges.*

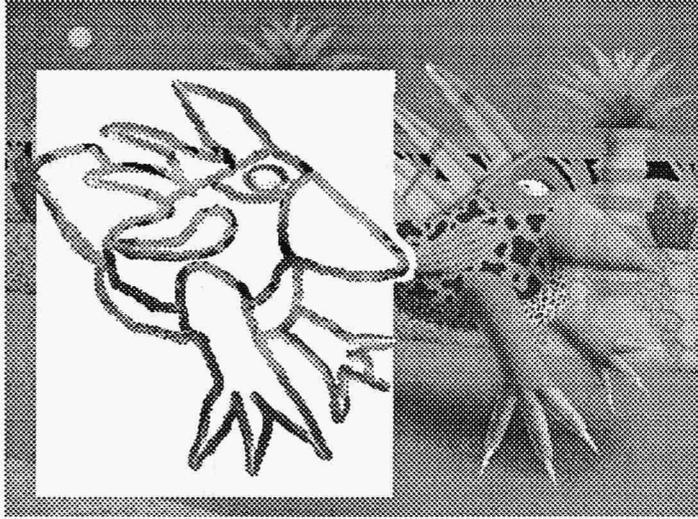


## ***MASK EDITOR TUTORIAL***

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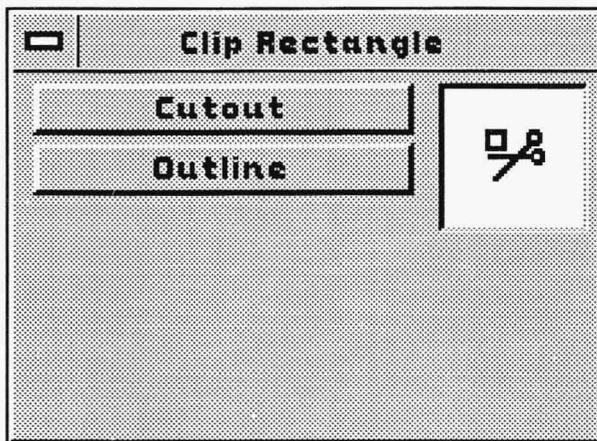
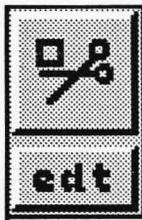
1. Load an image onto your canvas.
2. Select the PEN functions push-button on the Main Menu Bar to open the Pen drop-down menu. Select a large pen.
3. Select the INK functions push-button from the Main Menu Bar to open the Ink drop-down menu. Select Color from the drop-down menu. Choose a color from the palette in the Ink Color menu that is different from the background color.
4. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Freehand from the drop-down menu. Activate the Repeat button.
5. Select the EDT functions push-button on the Main Menu Bar to open the Edit drop-down menu. Select Mask from the drop-down menu. When the Mask menu appears, select the Mask button.
6. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
7. Paint on the canvas. As you paint, a mask is applied to the canvas. (You are not painting the current color to the canvas.)
8. Press Cancel to return to the Main Menu Bar. Select the EDT icon to open the Mask menu. Select the Use Mask button.
9. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select Rectangle from the drop-down menu. Activate the Filled and Corners buttons.
10. Press Cancel on the mouse to clear the Main Menu Bar from the screen.

11. Paint a rectangle over and around the area you masked. The rectangle shows the current color except where the image is protected by the mask.



12. Press Cancel to return to the Main Menu Bar. Try other combinations using the various options in the Mask Editor menu. Also try saving the mask you create.

## CLIP RECTANGLE

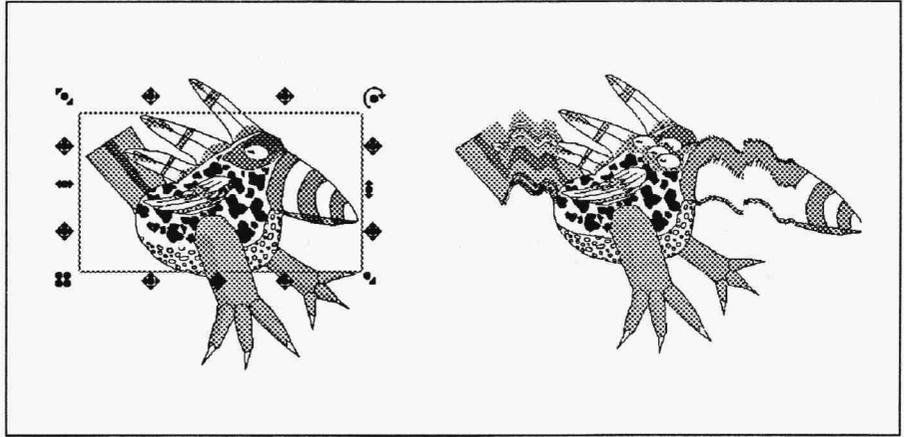


Clip Rectangle is an editing function that allows you to cut and paste, flip, rotate, stretch, and shrink a rectangular portion of your image. When you cut and move the rectangle from its original location on the canvas, you can either leave behind a copy of the clipped area or replace the rectangle-shaped area with the current color or pattern.

To use Clip Rectangle, draw a rectangle around the portion of the image you want to edit and press Select. A ghost rectangle appears, surrounded by icons. These icons control how you move, flip, rotate, and resize the clipping. Select the icon you want to use, edit the clipping, and press Select to see the effect of the icon. If you like the effect or position, you must select either the Paste or Paintbrush icon to paint the clipping in that place. You can cancel if you decide you don't want to paint the clipping down at all or if you want to select another clipping. Options in Clip Rectangle allow you to work with only an outline of the rectangular area or with the image area itself. TEMPRA PRO usually shows the entire contents of a clipping. If there is insufficient memory to show the contents of a clipping, an outline of the clipping is automatically used.



## CLIP RECTANGLE EXAMPLES



On the left, the original image of Buzz with Clip Rectangle icons on the editing area. On the right, Buzz edited using various Clip Rectangle options.



## CLIP RECTANGLE CONTROLS

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### Cutout



Cutout leaves behind the current color or pattern when you move the rectangle-shaped clipping. If the Cutout button is inactive, a copy of the clipping area remains in the original position.

### Outline



Outline displays the clipping only as a ghost outline until the clipping is painted to the canvas. If Outline is inactive, you will see the contents of the clipping while you move, flip, or resize it.

## CLIP RECTANGLE ICONS

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Whenever the arrow cursor is moved close to one of these icons, the cursor shape changes to “mimic” the icon. This tells you when you’ve got the cursor close enough to the icon to perform the icon function.

### Proportional Stretch



The Proportional Stretch icon is a circle with an arrow on the top left and bottom right sides. Moving the ghost rectangle away from the center of the clipping makes the clipping larger, while moving the ghost rectangle toward the center of the clipping makes the clipping smaller. When the clipping is the desired size, press Select to redraw the clipping at its new size. Select the Paste icon to paint the clipping on the canvas. Proportional Stretch always maintains the original proportions of the clipping regardless of the clipping’s size.

### Move



The Move icon allows you to reposition a clipping anywhere on the screen. There are eight Move icons around a clipping. All eight icons perform the same function. To move a clipping, press and hold down the Select button on your mouse with the cursor over one of the Move icons. As you hold Select and move the mouse, the clipping moves. When the clipping is in the desired location, release the mouse button. Select the Paste icon to paint the clipping in its new location. It is



possible to move part of a clipping off the edge of the screen or canvas. However, only the portion of the clipping that remains on your current screen area will be painted down.

### Edge Blend



The Edge Blend smooths edges of clippings pastes on the screen. The staircase icon means Edge Blend is off. The smooth diagonal line means Edge Blend is active. The functions won't smooth edges of a transparent icon. Click on the icon to toggle between the staircase and diagonal line.

### Rotate



The Rotate icon, located at the top right of the clipping, lets you rotate the clipping around its axis or center point. You can rotate any number of degrees. To rotate a clipping, select the Rotate icon (don't hold the Select button). A ghost outline of the clipping rotates as you move the mouse. Moving the mouse left and right rotates the clipping counter-clockwise and clockwise, respectively. When the ghost outline of the clipping is rotated to the desired angle, select Paste to paint the clipping down at that angle.

### Up-Down Flip



The Up-Down Flip icon flips a clipping from top to bottom. To flip a clipping from top to bottom, press Select with the cursor over the Up-Down Flip icon. The clipping flips over. Select Paste to paint the flipped clipping on the canvas.

### Non-proportional Stretch



The Non-proportional Stretch icon is similar to the Proportional Stretch icon, but doesn't maintain the proportion of the clipping's original appearance. Non-proportional Stretch doesn't limit the way a clipping can be stretched and can be used to reshape the clipping. You can make a clipping taller and narrow or shorter and wider. To stretch a clipping, press Select when the cursor is over the Non-proportional Stretch icon. As you move the mouse, the ghost outline of the clipping becomes smaller or larger. Select the Paste icon to paint the resized clipping onto the canvas.



### Transparency

The Transparency icon is actually two icons in one and turns the transparency option on and off. Press Select with the cursor over the Transparency icon to toggle between “Transparency on” and “Transparency off.” If the Transparency icon looks like a diamond with a hole in it, Transparency is active. This means the transparency color is invisible when you paint the clipping onto the canvas. If the diamond has no hole in it, Transparency is inactive and the transparency color is painted onto the canvas. On 8-bit (256-color) display boards (such as VGA, SVGA, and 8514/A), the color in the 0 position on the Ink Color palette (top row, leftmost position), regardless of its color values, is the transparency color. On displays with more than 256 colors, true black (0 red, 0 blue, 0 green) is always the transparency color, regardless of its position on the palette.



### Paste

The Paste icon, located at the bottom left of the clipping, pastes or paints the clipping onto the canvas. To paste your clipping, press Select with the cursor over the Paste icon. The clipping is painted onto the canvas in that location. Although Paste paints one copy of the clipping to the canvas, you can move the same clipping and paste it in as many locations as you want before canceling out of your current clipping.



### Left-Right Flip

The Left-Right flip icon flips a clipping from the left to the right and vice versa. To flip a clipping, press Select when the cursor is over the Left-Right Flip icon. The clipping flips over from side to side. Select Paste to paint the flipped clipping down.



### Paintbrush

The Paintbrush icon in the center of a clipping paints either one copy or continuous copies of the clipping onto the canvas. If you just press Select over the Paintbrush icon, it serves the same purpose as the Paste icon. However, by holding the Select button down with the cursor over the Paintbrush icon and moving the mouse, you can use the clipping as a paintbrush to create special effects. If you move the mouse slowly



as you paint the clipping, you paint a continuous trail of clippings onto the canvas. If you move the mouse quickly, individual copies of the clipping are painted on the canvas. The size of the clipping and speed of the computer, as well as how fast you move the mouse, determine the results you get. The clipping is painted as you move it, so you don't need to select Paste.



## CLIP RECTANGLE HINTS AND COMBINATIONS

If the outline of your clipping isn't critical (you plan to paint around the clipping in its new position anyway, you have a lot of empty space to place it in, your clipping is a line of text, etc.), then using Clip Rectangle is much faster than using Clip Polygon because you outline the clipping area with a rectangle rather than having to draw a complex outline.

You can move a clipping as much as you want before pasting it down — you can even switch to any other Move icon by release the Select button, moving the cursor to another icon, and pressing and holding Select again. Eight Move icons are provided so that you can position a clipping very close to (or partially off of) the edge of you screen. For example, if you select a Move icon on the right side of your clipping and move it to the extreme right side of the screen, at some point your clipping will seem to encounter an invisible barrier preventing it from moving further to the right. If you release the Select button, you'll see that the icons on the right side of the clipping have hit the edge of the screen. Move the cursor and use one of the Move icons on the other side of the clipping to position the clipping closer to the screen edge.

Enlarging and/or rotating a clipping can make it blurry because TEMPRA PRO has to add to and/or repaint the pixels in the clipping. Rotating a clipping in 90 degree increments (one-quarter turns) won't produce as much blurring as 45 degree (one-eighth turns) rotations.

If you want to move a portion of an image from one side of the canvas to the other, and you're using a canvas larger than the screen, you may want to save the clipping to disk first. Then move the slider bars until the screen shows the portion of the canvas you want to paste the clipping onto. Load the clipping from the disk and paste it in place.

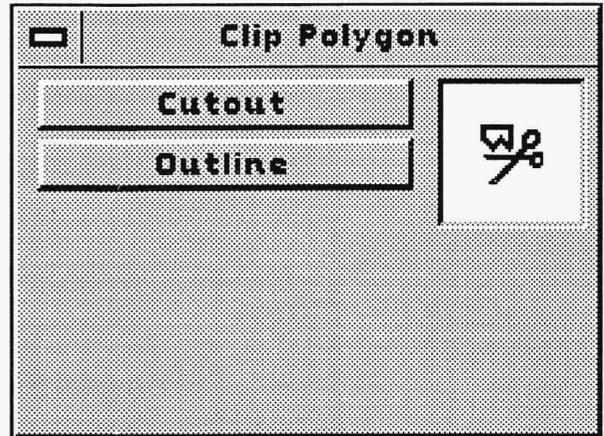
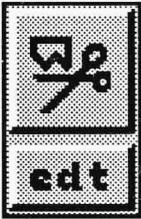


## **CLIP RECTANGLE TUTORIAL**

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1. Load an image onto the canvas.
2. Select the EDT functions push-button on the Main Menu Bar to open the Edit drop-down menu. Select Clip Rectangle from the drop-down menu. Make sure none of the options on the Clip Rectangle menu is active.
3. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
4. Position the cursor at the top left of the image area you want to clip. Press Select. Move the mouse and a ghost rectangle appears. When the rectangle outlines the area you want to clip, press Select. Icons appear around the clipping.
5. Position the cursor over a Move icon and press and hold down the Select button. Move the mouse. The clipping moves to a new location.
6. Release the mouse button and select the Paste icon to paint the clipping in the new location.
7. Press Cancel to return to the Main Menu Bar. Try other combinations using the Clip Rectangle options and the various icons.

## CLIP POLYGON

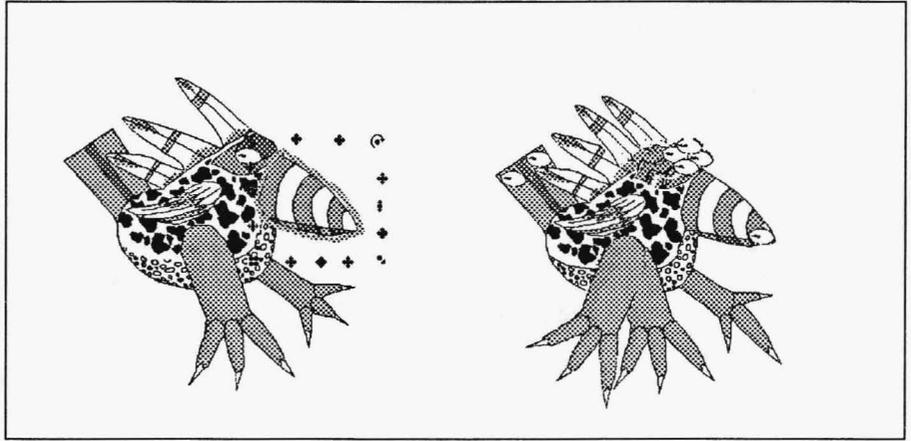


Clip Polygon is an editing function that allows you to cut and paste, flip, rotate, stretch, and shrink a polygonal portion of your image. When you cut and move the polygon from its original location on the canvas, you can either leave behind a copy of the clipped area or replace the polygonal area with the current color or pattern.

To use Clip Polygon, draw an outline around the portion of the image you want to edit and press Select. (Drawing the polygon with this function works the same way as with Irregular Polygon in the Geometry functions.) A ghost polygon appears, surrounded by icons. These icons control how you move, flip, rotate, and resize the clipping. Select the icon you want to use, edit the clipping, and press Select to see the effect of the icon. If you like the effect or position, you must select the Paste or Paintbrush icon to paint the clipping in that place. You can cancel if you decide you don't want to paint the clipping down at all or if you want to select another clipping. Options in Clip Polygon allow you to work only with an outline of the polygonal area or with the image area itself. TEMPRA PRO usually shows the entire contents of a clipping. If there is insufficient memory to show the contents of a clipping, an outline of the clipping is automatically used. Clip Polygon is especially useful when you need to edit irregularly-shaped portions of an image.



## CLIP POLYGON EXAMPLES



On the left, the original image of Buzz with Clip Polygon icons on the editing area. On the right, the edited image using various Clip Polygon icons.



## CLIP POLYGON CONTROLS

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### Cutout



Cutout leaves behind the current color or pattern when you move the polygonal clipping. If the Cutout button is inactive, a copy of the clipping area remains in the original position.

### Outline



Outline displays the clipping as a ghost outline until the clipping is painted to the canvas. If Outline is inactive, you will see the contents of the clipping while you move, flip, or resize it.

## CLIP POLYGON ICONS

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Whenever the arrow cursor is moved close to one of these icons, the cursor shape changes to “mimic” the icon. This tells you when you’ve got the cursor close enough to the icon to perform the icon function.

### Proportional Stretch



The Proportional Stretch icon is a circle with an arrow on the top left and bottom right sides. Moving the ghost polygon away from the center of the clipping makes the clipping larger, while moving the ghost polygon toward the center of the clipping makes the clipping smaller. When the clipping is the desired size, press Select to redraw the clipping at its new size. Select the Paste icon to paint the clipping on the canvas. Proportional Stretch always maintains the original proportions of the clipping regardless of the clipping’s size.

### Move



The Move icon allows you to reposition a clipping anywhere on the screen. There are eight Move icons around a clipping. All eight icons perform the same function. To move a clipping, press and hold down the Select button on your mouse with the cursor over one of the Move icons. As you hold Select and move the mouse, the clipping moves.



It is possible to move part of a clipping off the edge of the screen or canvas. However, only the portion of the clipping that remains on your current screen area will be painted down.

### Edge Blend



The Edge Blend smooths edges of clippings pastes on the screen. The staircase icon means Edge Blend is off. The smooth diagonal line means Edge Blend is active. The functions won't smooth edges of a transparent icon. Click on the icon to toggle between the staircase and diagonal line.

### Rotate



The Rotate icon, located at the top right of the clipping, lets you rotate the clipping around its axis or center point. You can rotate any number of degrees. To rotate a clipping, select the Rotate icon (don't hold the Select button). A ghost outline of the clipping rotates as you move the mouse. Moving the mouse left and right rotates the clipping counter-clockwise and clockwise, respectively. When the ghost outline of the clipping is rotated to the desired angle, select Paste to paint the clipping down at that angle.

### Up-Down Flip



The Up-Down Flip icon flips a clipping from top to bottom. To flip a clipping from top to bottom, press Select with the cursor over the Up-Down Flip icon. The clipping flips over. Select Paste to paint the flipped clipping on the canvas.

### Non-proportional Stretch



The Non-proportional Stretch icon is similar to the Proportional Stretch icon, but doesn't maintain the proportion of the clipping's original appearance. Non-proportional Stretch doesn't limit the way a clipping can be stretched and can be used to reshape the clipping. You can make a clipping taller and narrow or shorter and wider. To stretch a clipping, press Select when the cursor is over the Non-proportional Stretch icon. As you move the mouse, the ghost outline of the clipping becomes smaller or larger. Select the Paste icon to paint the resized clipping onto the canvas.



### Transparency

The Transparency icon is actually two icons in one and turns the transparency option on and off. Press Select with the cursor over the Transparency icon to toggle between “Transparency on” and “Transparency off.” If the Transparency icon looks like a diamond with a hole in it, Transparency is active. This means the transparency color is invisible when you paint the clipping onto the canvas. If the diamond has no hole in it, Transparency is inactive and the transparency color is painted onto the canvas. On 8-bit (256-color) display boards (such as VGA, SVGA, and 8514/A), the color in the 0 position on the Ink Color palette (top row, leftmost position), regardless of its color values, is the transparency color. On displays with more than 256 colors, true black (0 red, 0 blue, 0 green) is always the transparency color, regardless of its position on the palette.



### Paste

The Paste icon, located at the bottom left of the clipping, pastes or paints the clipping onto the canvas. To paste your clipping, press Select with the cursor over the Paste icon. The clipping is painted onto the canvas in that location. Although Paste paints one copy of the clipping to the canvas, you can move the same clipping and paste it in as many locations as you want before canceling out of your current clipping.



### Left-Right Flip

The Left-Right flip icon flips a clipping from the left to the right and vice versa. To flip a clipping, press Select when the cursor is over the Left-Right Flip icon. The clipping flips over from side to side. Select Paste to paint the flipped clipping down.



### Paintbrush

The Paintbrush icon in the center of a clipping paints either one copy or continuous copies of the clipping onto the canvas. If you just press Select over the Paintbrush icon, it serves the same purpose as the Paste icon. However, by holding the Select button down with the cursor over the Paintbrush icon and moving the mouse, you can use the clipping as a paintbrush to create special effects. If you move the mouse slowly



as you paint the clipping, you paint a continuous trail of clippings onto the canvas. If you move the mouse quickly, individual copies of the clipping are painted on the canvas. The size of the clipping and speed of the computer, as well as how fast you move the mouse, determine the results you get. The clipping is painted as you move it, so you don't need to select Paste.



## CLIP POLYGON HINTS AND COMBINATIONS

Clip Polygon is useful for clipping image portions with complex shapes. By outlining just the area of the image you wish to move or edit, you can increase the amount of control you have when positioning the clipping in a new location.

The Stretch functions can make the area inside your polygon smaller or larger. But the Stretch functions have limitations. If you make an area too small, much of the original image will be lost. If you make an area too large, the area may appear blurred or have a pixilated appearance. Pixilation is not desired for photo-realistic images, but can be an interesting effect for artistic images.

Here's an example of a transparency color in a clipping: Suppose you have an image of a tree. You want to paint a bird and place it in the branches of the tree. If your tree image has some "blank" space in it (i.e., the background isn't paint yet or you don't mind painting over part of it), you can use part of the background to paint the bird. (If you don't want to paint on the tree image background, save the tree image to disk, clear the screen, and paint the bird on a new screen — save the bird to disk as a clipping when it's finished.) Before painting the bird, make sure the background color you're going to paint it on is the transparency color (either ink palette 0 position or 0,0,0 black, depending on what display board you use). You can clear the screen with that color, fill an area with it, or paint a filled rectangle with it. Then paint the bird on top of the transparency color area. Remember, if you use the transparency color on any part of the bird, that part will also be transparent when you move the clipping. After the bird is completely painted, save the bird to disk as a clipping (saving the clipping to disk even if you paint the bird on an unused area of the tree image is recommended because it will be available for future use). Then load the clipping and make sure the Transparency icon looks like a diamond with a hole in it (select the icon if necessary). With Transparency active, you can position the bird in the tree without the clipping background hiding the tree.

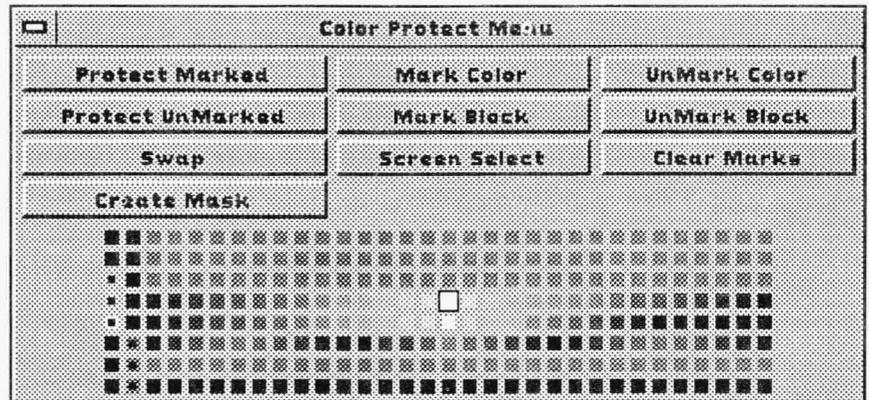


## CLIP POLYGON TUTORIAL

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1. Load an image onto the canvas.
2. Select the EDT functions push-button on the Main Menu Bar to open the Edit drop-down menu. Select Clip Polygon from the drop-down menu. Make sure none of the options on the Clip Polygon menu is active.
3. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
4. Draw a polygon around the area in the image you want to clip. Press Select at the first point in your polygon. Move the mouse to stretch the first line segment of the polygon and press Select again to nail down the endpoint of the line segment. Continue drawing all the lines in your polygon. You don't have to draw the final line connecting the first point and last point of your polygon. TEMPRA PRO will close your polygon for you when you press Cancel to create the polygon clipping. Icons appear around the clipping.
5. Position the cursor over a Move icon and press and hold the Select button. Move the mouse. The clipping moves to a new location.
6. Release the mouse button and select the Paste icon to paint the clipping in the new location.
7. Press Cancel to return to the Main Menu Bar. Try other combinations using the Clip Polygon options and the various icons.

## COLOR PROTECT



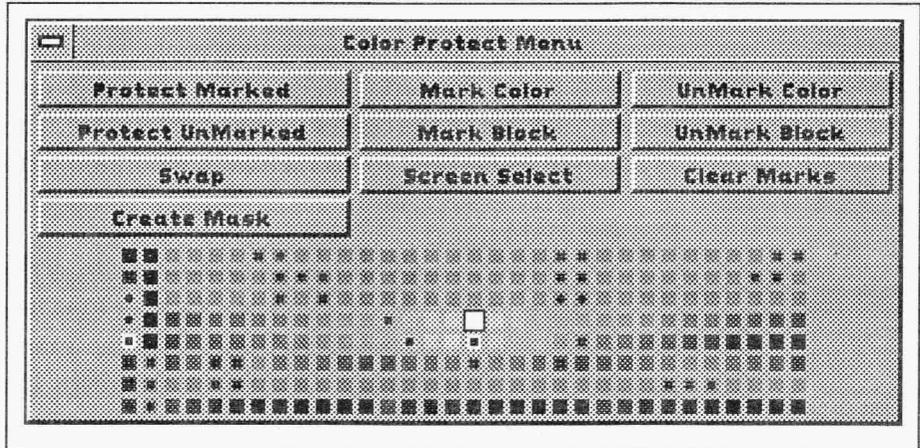
Color Protect, like Mask, is a protection function. But while Mask protects specific *areas* of the canvas, Color Protect protects specific *colors*. You can use other functions with Color Protect active, including Clip Rectangle and Polygon. (However, Mask cannot be active when Color Protect is active.) You can place a clipping over colors that have been protected, but you can't paint using the paint tools onto protected colors. If Color Protect is active, selecting the icon on the Main Menu Bar turns it off. You must select the icon again to activate it or go into the drop-down menu to access the Color Protect menu.

Color Protect provides a Swap option. This protects all colors on the canvas except one, which you can select from the palette or from the canvas. Using Swap is a fast way to replace one color with another. Color Protect also lets you create a mask that is a physical equivalent of the color protection. This mask can then be loaded as a mask in the Mask Editor menu.

Color Protect is different from Palette Lock in the Ink functions menu. While Palette Lock protects colors from being changed in the palette itself, Color Protect prevents colors from being changed on the canvas while you paint. It is possible to paint over a color that has been locked, but not a color that is protected.



## COLOR PROTECT EXAMPLE



The palette in the Color Protect menu shows colors that have been protected. These protected colors are marked by a rectangular dot in the middle of the color square.



## COLOR PROTECT CONTROLS

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### Protect Marked

The button is a rectangular box with a stippled background and a thin border. The text "Protect Marked" is centered in a bold, sans-serif font.

The Protect Marked button protects the colors marked on the Color Protect palette. The protected colors have a solid rectangular dot in the center of the color square. The protected colors are shown as marked in all menus that contain a palette.

### Protect UnMarked

The button is a rectangular box with a stippled background and a thin border. The text "Protect UnMarked" is centered in a bold, sans-serif font.

The Protect UnMarked button reverses the protection used by Protect Marked. When Protect UnMarked is active, the unmarked colors are protected and only the marked colors can be painted over. The Protect Marked and Protect UnMarked buttons toggle with each other — only one of them may be active at one time.

### Mark Color

The button is a rectangular box with a stippled background and a thin border. The text "Mark Color" is centered in a bold, sans-serif font.

The Mark Color button allows you to select the individual colors you want to protect. When you select the Mark Color button, the cursor turns into a Pick icon. To pick a color to be marked, move the Pick icon over the color on the palette on the Color Protect menu and press Select. A dot appears in the center of the color to show that it is protected. You can mark as many colors as you want with the Pick icon. Press Cancel to stop marking colors.

### UnMark Color

The button is a rectangular box with a stippled background and a thin border. The text "UnMark Color" is centered in a bold, sans-serif font.

The UnMark Color button is used the same way as Mark Color, but it removes the mark for color protection. Simply select a marked color on the palette with the Pick icon to unmark it so that it is no longer protected. The dot disappears from the color square to show it is not protected. You can unmark as many colors as you want with the Pick icon. Press Cancel to stop unmarking colors.

### Mark Block

The button is a rectangular box with a stippled background and a thin border. The text "Mark Block" is centered in a bold, sans-serif font.

The Mark Block button allows you to select a group of colors to be marked at one time. To mark a block of colors, select the Mark Block button. Move the cursor to the first color in the group you want to protect and press Select. Move to the last color you want in the block and press Select. The two colors selected and those between them are



marked. TEMPRA PRO reserves the first two columns in the palette for its menu colors. These two columns are “read” from top to bottom. The menu colors may be marked for color protection using Mark Block, but the marks are placed on these colors in top-to-bottom order, while colors on the rest of the palette are marked in left-to-right, top-to-bottom order.

### UnMark Block

The UnMark Block button functions in the same manner as Mark Block. UnMark Block removes protection marks from blocks of colors.

### Clear Marks

The Clear Marks button removes protection marks from all colors. On displays with more than 256 colors, colors that are protected but not visible on the palette are also cleared from protection.

### Screen Select

The Screen Select button allows you to select colors from the image, rather than the palette, for protection. When the Screen Select button is selected, the menus disappear. Move to an area of the image that contains the colors you want to protect and press Select. As you move the mouse a rectangle forms. When the area containing the colors you want to protect is within the rectangle, press Select a second time and the Color Protect menu returns with the colors within the rectangle marked for protection on the palette. On display boards with more than 256 colors, more colors can be protected using Screen Select than can be seen on the palette in the Color Protect menu. On displays using 16 bits per pixel (32,000 colors), TEMPRA PRO can protect up to 2,500 colors at one time. Displays with 24 or 32 bits per pixel can have up to 1,666 colors protected at one time.

### Swap

Swap is a special form of color protection that allows you to exchange one color for another. When you select the Swap button, the menus disappear and a Pick icon appears on the image. Select a color from the image with the Pick icon. The Color



Protect menu returns and that color becomes the “swap” (unprotected) color. All other colors in the image are protected and cannot be painted over. If you haven’t already selected your current painting color, you can select it one of three ways: from the image (by simply selecting that color), from the Color Protect menu palette (by pointing the cursor at the desired color on the palette and pressing F2), or from the Ink Color menu (by opening the Ink Color menu and selecting a color from that palette). While the Swap button is active, only the swap color can be painted over. In effect, using Swap is the same as marking a single color for protection and then turning on Protect UnMarked. To turn off Swap, you can select either Clear Marks or Protect Marked. When Swap is active, the Protect UnMarked button is also active. Swap is handy for replacing colors on the canvas one at a time.

### Create Mask



The Create Mask button converts the color protection used in the Color Protect menu into a mask for use in the Mask Editor menu. When you select Create Mask, TEMPRA PRO reads the colors on the screen and creates a mask file called COLORPRO.MSK from the protected colors. When you select the Mask Editor menu, the COLORPRO.MSK file appears in the menu list box. The mask created in the Color Protect menu may be loaded from the Mask Editor menu just like any other mask. The mask file produced by Create Mask is always called COLORPRO.MSK, so each time you select Create Mask, the existing COLORPRO.MSK file is overwritten and contains the latest selection of protected colors.



## ***COLOR PROTECT HINTS AND COMBINATIONS***

Color Protect allows you to select the colors that won't be painted over. With the Screen Select option, you can protect all the blues in a sky or reds in an apple. Then you can paint around the sky or apple and be sure the areas you've protected won't be painted on.

Using the Create Mask option, your protected colors can be used as the basis for a physical mask. You can even use a mask created in one image as a mask in another image. If you create masks out of the colors you protect during the early stages of creating your image when you are working with single colors, you can use them later when the image becomes complex.

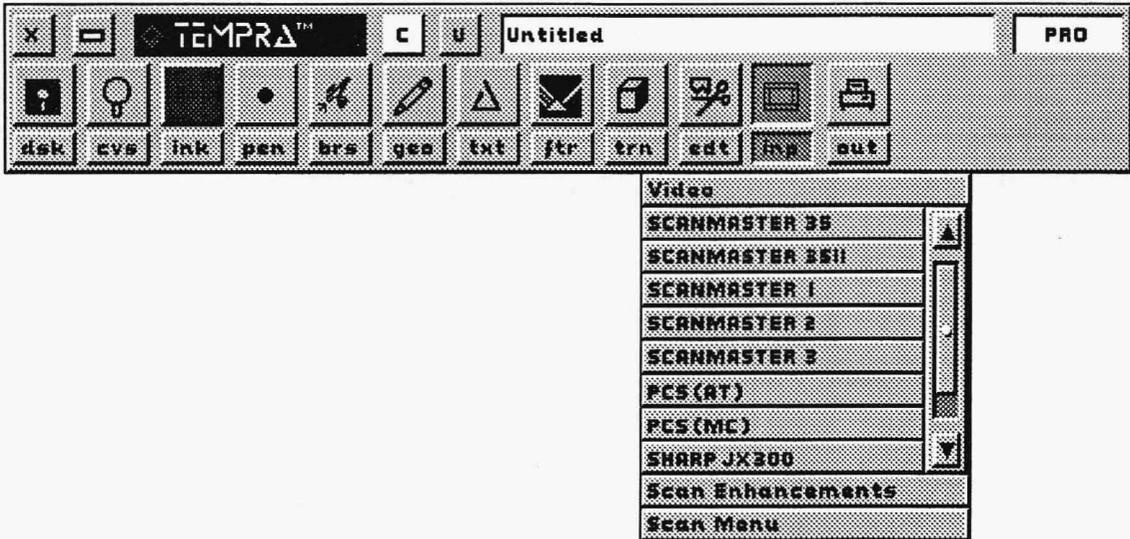


## ***COLOR PROTECT TUTORIAL***

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1. Load an image onto the canvas.
2. Select the GEO functions push-button on the Main Menu Bar to open the Geometry drop-down menu. Select the Freehand function from the drop-down menu. Activate the Repeat button.
3. Select the EDT functions push-button on the Main Menu Bar to open the Edit drop-down menu. Select Color Protect from the drop-down menu.
4. In the Color Protect menu, select Mark Color. The cursor becomes a Pick icon. Move the icon onto the palette and select several different colors. Press Cancel to finish marking colors. Select Protect Marked.
6. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
7. Start painting with Freehand. The colors that were marked for protection won't be painted over.
8. Press Cancel to return to the Main Menu Bar.
9. Select the EDT functions icon. The icon will turn off. Select it again to open the Color Protect menu. In the Color Protect menu, select Protect UnMarked.
10. Press Cancel on the mouse to clear the Main Menu Bar from the screen.
11. Again paint with the Freehand tool. The colors that were protected before are not protected and the colors that could be painted over before are now protected.

# Input Functions

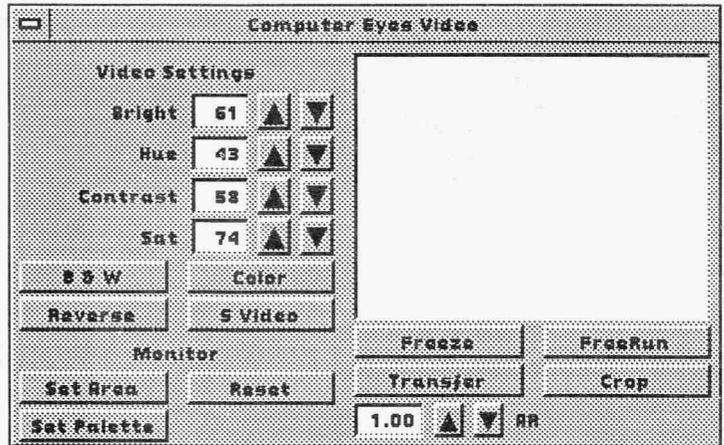
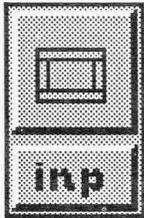


## INTRODUCTION

The Input functions let you bring images into TEMPRA PRO for editing using two methods: video and scanning. Video capture display boards can capture images directly from television or other standard video signals. However, if you are not using a display board that directly captures video, the Video function on the drop-down menu is inactive (grayed).

TEMPRA PRO supports various Howtek and Sharp scanners, including the Howtek ScanMaster series, the Howtek Personal Color Scanner, the Howtek 35mm scanner series, the Sharp JX300, JX450, and JX600. Unlike the other drop-down menus on the Main Menu Bar, two of the Input functions cannot be accessed (they are grayed) until you have selected the input method you want to use. Select a scanner from the list of scanners available on the drop-down menu. When a scanner is selected, the Scan Enhancements and Scan Menu functions become available.

## VIDEO

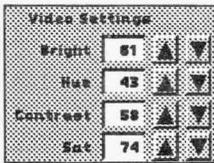


The Video menu is only available when TEMPRA PRO is on a display board that captures video directly. Boards such as the Matrox Illuminator 16 and the Artist RealVision 16E support video capture. For full details on video capture, use the manual that came with your video capture board. On VGA and SVGA board, TEMPRA PRO supports video capture using such video digitizing boards as the ComputerEyes RT, SNAPplus, Video Blaster, Digiview, and IEV VIP-8000. These board accepts a television signal from a standard NTSC, PAL, or S-VHS source, such as a video camera or VCR.

With these video boards, you can capture video and place it on your computer screen as part of another image (mixing “art” and “photography”) or as its own image. The display window shows what the video source is sending into your computer. The image in the display window is transferred onto the computer screen. One thing to keep in mind when using the Crop and Set Area buttons in Video is that Crop determines the portion of the *video* to be captured, while Set Area determines the video’s *placement* on the canvas.



## VIDEO CONTROLS



### Video Settings

The video settings buttons let you adjust the brightness, hue, contrast, and saturation of the image. You can type the value in the number box or use the up and down arrows to adjust the value.



### B&W/Color

B&W transfers video onto the computer as a black-and-white image. Color transfers captured video onto the computer as a color image.



### Reverse

Reverse sets the proper reading of the interlace from the video source.



### S Video

S Video allows you to capture using a Super-VHS video camera.



### Set Area

Set Area sets the area on the screen for the image to transfer to. Set the area by drawing a rectangle over a specified area on the screen.



### Reset

The Reset button resets the Crop and Set Area to full screen.



### Set Palette

Set Palette adjusts the image to the optimum 256-color palette.



### Freeze/FreeRun

Freeze stops the frame of video from moving in the display window. When FreeRun is active, video appears "alive" in the display window.



### Transfer

Transfer captures the video onto the canvas in the area you have set.



### Crop

Crop lets you determine the portion of the video to be captured.

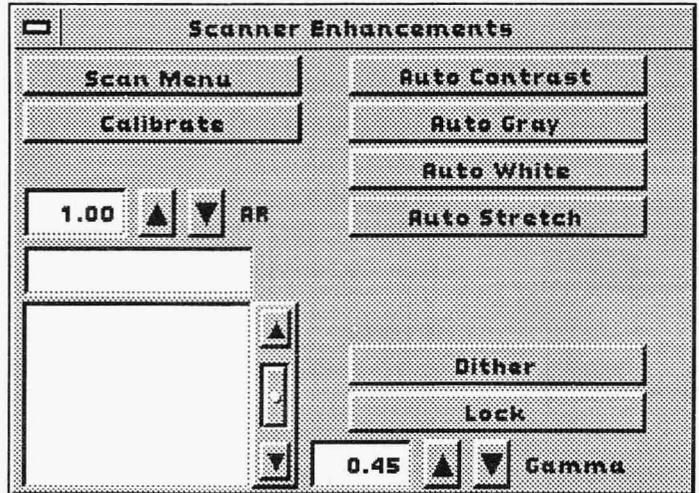
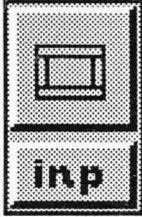


### AR (Aspect Ratio)

Aspect Ratio stretches images in the X or Y direction.



## SCANNER ENHANCEMENTS



The Scanner Enhancements menu complements the Scan Setting menu. You control the type of color model used in the scan, the automatic settings available, and, for 35mm scanning, the look-up tables for certain types of film. The Auto buttons can only be used when doing a final scan. They have no effect on a pre-scan.



## SCANNER ENHANCEMENTS CONTROLS

### Scan Menu



The Scan Menu button brings the Scan Settings menu to the screen. This allows you direct access to the Scan Settings menu rather than going back into the drop-down menu.

### Calibrate



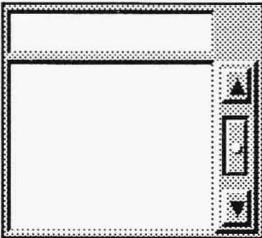
You use the Calibrate button with certain 35mm scanners. Both the Scan Settings and Scanner Enhancements menus include a Calibrate button. Refer to the section of this manual called "Calibrating 35mm Scanners" for a detailed description of the calibration process.

### AR (Aspect Ratio)



Use the Aspect Ratio number box or up and down arrows to adjust the aspect ratio (the X and Y axes) of the image you are scanning.

### Film File List Box



The Film File list box is only available when you use a 35mm scanner. The film files listed in the box can be loaded into TEMPRA PRO to compensate for the differences in film type. If you are scanning photographs or paper art, you cannot use the Film File list box. The film files are provided by the scanner manufacturer and should be copied into the TEMPRA PRO directory on the hard disk.

### Auto Contrast

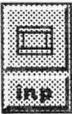


Auto Contrast applies the maximum possible contrast to your image. The contrast is applied over the entire image in a final scan.

### Auto Gray



Auto Gray equalizes the maximum amount of all the colors in a scan and makes certain the scan does not have too much of any one color.



### Auto White



The Auto White button brightens the whites in an image that may appear too dark. Using Auto White is similar to increasing the exposure in a photograph.

### Auto Stretch



The Auto Stretch button changes some of the brightest highlights in an image to white and some of the darkest colors to black.

### Dither



The Dither button causes a scan to be dithered, which provides the appearance of more than 256 colors on a display board that has a palette of 256 colors, such as a VGA or 8514 adapter. Dithered images combine red, green, and blue into a pattern that represents the colors of the original art.

### Lock



The Lock button locks the colors on the palette and forces the scanner to use those colors to produce an image. The colors in the scan are the colors in the current palette.

### Gamma



The Gamma fine-tuning button adjusts the overall contrast range of your scan. The range is .20 to 4.00. A high gamma value produces an image with very high contrast (less shadow and highlight detail), while a low value produces an image with a lower contrast (more shadow and highlight detail). Most computer monitors show a pleasing image with gamma set between .45 and .80. If you are exporting your image, you should try exchanging a test file at different gammas to determine the settings for your other programs.



## RECOMMENDED SETTINGS

Although each image has its own optimum settings and each TEM-PRA PRO user has his or her own taste, the following recommended settings were used in scanning test images and may be useful when you first begin scanning.

For color on VGA or other 8-bit displays:

Gamma = 0.62

Multipliers:

(R) Red = 1.50

(G) Green = 1.50

(B) Blue = 1.50

For black and white image scanning:

Gamma = .62

(B&W) Black and White = 1.5



## **CALIBRATING 35MM SCANNERS**

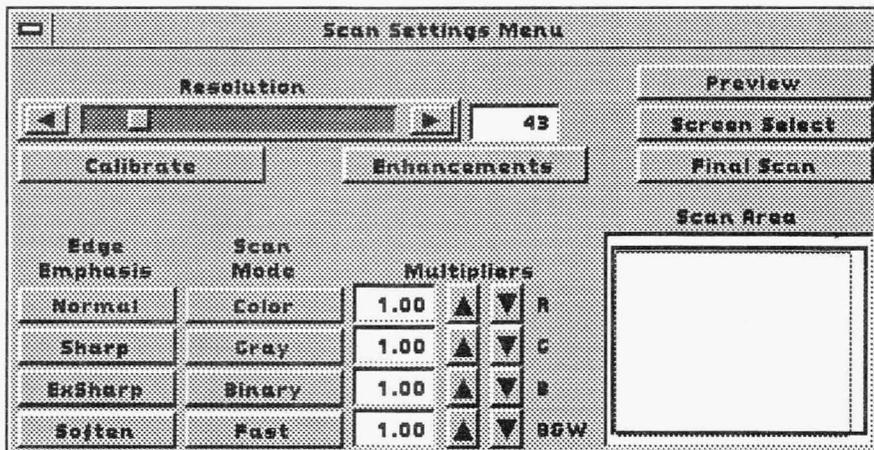
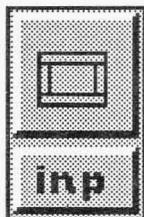
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Some scanners require calibration each time you turn them on. This process can be accomplished within TEMPRA PRO for certain scanners. For instance, when you select a Howtek 35mm scanner from the Input drop-down menu, the Calibrate button in the Scanner Enhancements menu becomes available, starting a four-step process:

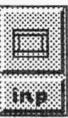
1. A box appears on the screen with the message "Press Yes When Dark Slide Is Inserted." When this message appears, insert the dark slide in the slide holder. Place the holder in the scanner and close the scanner cover. When the scanner cover is in place, move the cursor to the Yes button and press Select.
2. The box changes to "Dark Calibration In Progress. Please Wait." The 35mm scanner is performing the dark calibration.
3. When the dark calibration is complete, the message "Press Yes When Dark Slide Is Removed" appears. Remove the dark slide, move the cursor to Yes, and press Select.
4. The message "Light Calibration In Progress" appears on the menu. The 35mm scanner is performing the light calibration.

When the light calibration is complete, the menu with the calibration messages disappears and you can start scanning. You don't have to calibrate the scanner again until the next time it is turned on. The 35mm scanner package contains a disk with film files for you to copy onto your hard disk in the TEMPRA PRO directory. For best results, be sure to use the correct film file for your transparency.

## SCAN SETTINGS



The Scan Settings menu contains options for controlling the appearance of your scan and for starting the scan process. You can adjust the location of the scan on the original art, sharpness, and the colors in the final scan. The Scan Settings menu includes a Scan Area preview box that shows where the original art will be scanned. When scanning is complete, you can edit your image or save it using the Disk function.



## SCAN SETTINGS CONTROLS

### Preview



The Preview button tells the scanner to scan a black-and-white preview image on the screen. You can use the preview image to adjust the artwork in the scanner and to see the location of the area of interest in the original art.

### Screen Select



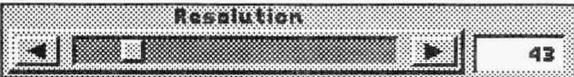
The Screen Select button lets you select the area of the original art to be included in the final scan. Before you can activate Screen Select, you must do a preview scan. When you select Screen Select, the Main Menu Bar and Scan Settings menu disappear from the screen. Move to the upper left corner of the area you want in the final scan and press Select. A rectangle forms as you move the mouse to the bottom right of the area for the final scan. Press Select a second time. The area in the rectangle is the area in the final scan. When the Screen Select is complete, the Resolution changes and the Scan Area preview box readjusts to the show the selected area.

### Final Scan

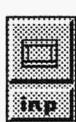


The Final Scan button starts the scanning process using any enhancements and settings you selected in the menus. You can stop the scanning process at any time by pressing Cancel.

### Resolution Slider



The Resolution slider bar and manual fine-tuning button determine the resolution in the final scan. The resolution automatically changes as you set the size of the scan with the Preview and Screen Select buttons or in the Scan Area representation box. The resolution is measured as the number of pixels per inch from the original art that will appear in the final art. Once you determine the scan area, a change to the resolution increases or decreases the number of pixels in the final scan. All scans appear on the canvas in TEMPRA PRO. The final scan may be larger than the area that is displayed on the screen. In this case, TEMPRA PRO places slider bars at the right and bottom of the screen when the final scan is complete.



### Calibrate



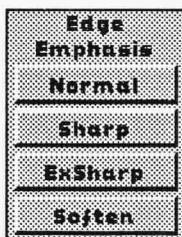
You can only use the Calibrate button with certain 35mm scanners. The Scan Setting menu and the Scanner Enhancements menu both have Calibrate buttons that operate the same way. Refer to the text titled "Calibrating 35mm Scanners" in the Scanner Enhancements section of this manual.

### Enhancements



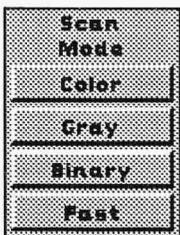
The Enhancements button brings the Scanner Enhancements menu to the screen. The Scanner Enhancements menu contains a button that brings the Scan Settings menu to the screen.

### Edge Emphasis



The Edge Emphasis buttons adjust the sharpness of the edges in a scan. The values that may be selected include: Normal, Sharp, ExSharp (Extra Sharp), and Soften. Each button applies a different emphasis to the scan. An image with sharp edges has a crisper look than one with softer edges. You can change the Edge Emphasis to suit your needs with each scan.

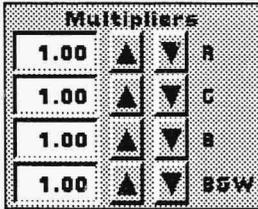
### Scan Mode



The Scan Mode buttons let you specify the type of scan you will produce: either color, gray, or binary. The Color Scan Mode button tells TEMPRA PRO to scan in color. Your display board determines the amount of color. On VGA displays, the maximum number of colors available is 256, while 16-bit display boards can have a maximum of greater than 32K colors and 24-bit displays can have 16,000,000. The Gray buttons lets you scan black-and-white images with up to 256 shades of gray ranging from pure white to pure black. Selecting the Gray button turns off the Color Multipliers fine-tuning buttons and turns on the B&W Threshold button. The Binary button changes a scan from containing shades of color to single colors. When Binary is active, the Multipliers fine-tuning buttons become Threshold buttons. You can produce interesting high-contrast effects by using the binary mode. The Fast button gives you a quicker scan.



## Multipliers

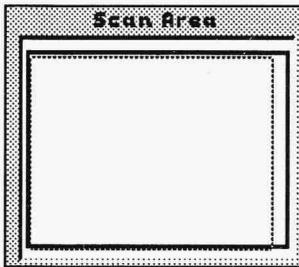


The Multipliers fine-tuning buttons determine the amount of red, green, and blue in your final scan. The values range from 0 to 4.00. A low value produces very little of the selected color and a high value produces a great deal of the color. Selecting the Gray button turns off the color Multipliers buttons and turns on the B&W multiplier button.

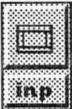
## Threshold

The Threshold fine-tuning buttons replace the Multipliers fine-tuning buttons when the Binary button is active. Thresholds may be used with the red, green, or blue colors or with B&W when the Gray button is active. The Threshold value is the value where the color is either placed onto the image or left out of the image. Each color (red, green, and blue) has its own threshold value. When a color falls below the value in the threshold, it is not placed into the scan. If the value is over the threshold, it is placed onto the scan. Each of the three colors will appear on the scan. If Gray is selected, the scan consists of either pure black or pure white. The shade of gray or brightness of the original and the Threshold value determine if it is black or white.

## Scan Area Representation Box



The Scan Area representation box displays the area of the scanner bed that will be scanned. You can use the Scan Area representation box to adjust the area to be scanned. If you place the cursor in the box and press Select, the nearest corner to the cursor jumps to the cursor location. You can hold down the Select button and move the corner on the canvas. As you adjust the area, the Resolution changes.



## SCANNING PROCEDURES

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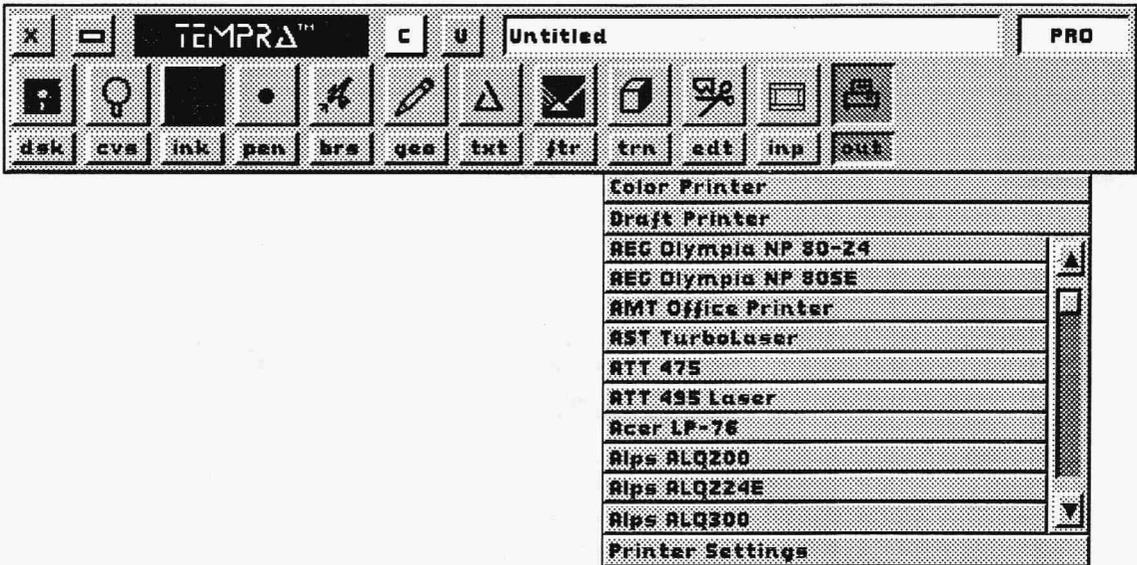
Scanning has two procedures for different display boards: one for 8-bit display boards (256 colors) and another for 16-bit (32,000 colors) and 24-bit (16 million colors) display boards. If you have a VGA, SuperVGA, or an 8514/A display board, you will scan at 8 bits. If you have a card with 16-bit or 24-bit capability, you will scan at 16 bits or 24 bits per pixel. The scanning procedure is:

1. Select the Input functions push-button on the Main Menu Bar to open the Input drop-down menu. Select the scanner attached to your computer.
2. When the scanner is selected, the Scanner Enhancements and Scan Menu functions become available. Select Scan Menu to access the Scan Settings menu.
3. If you have a 35mm scanner, you may need to calibrate the scanner. Your scanner manual should describe this function. Also refer to the section called "Calibrating 35mm Scanners" in this manual.
4. In the Scan Settings menu, select Preview. Your screen displays a black-and-white preview image of the source document you are scanning. Select Screen Select from the Scan Settings menu and the Main Menu Bar disappears from the screen.
5. Move the cursor to the top left of the area you want in your final scan. Use the mouse to select this point and move to the bottom right of the area you want in your final scan. A rectangle forms around the area. Press Select again when the rectangle surrounds the area you want to scan.
6. The area in the Representation Box changes to the area you want for the scan. Select your final scan settings (such edge emphasis, gamma, etc.) from the Scan Settings menu. Select Final Scan to produce the final version of your scan.



7. If you have an 8-bit display board, when you see the final scan on your display, you can save the images to your hard disk by using the Disk functions. If you have a 16- or 24-bit display board, select the Scan Enhancements function by selecting Enhancements from the Scan Settings menu, then continue to step 8.
8. Select Auto Contrast from the Scanner Enhancements menu to apply the Automatic Contrast Enhancement to the image.
9. Select any of the other enhancements and apply them to the image. When all the enhancements have been made, use the Disk function to save the image to your hard disk.

# Output Functions

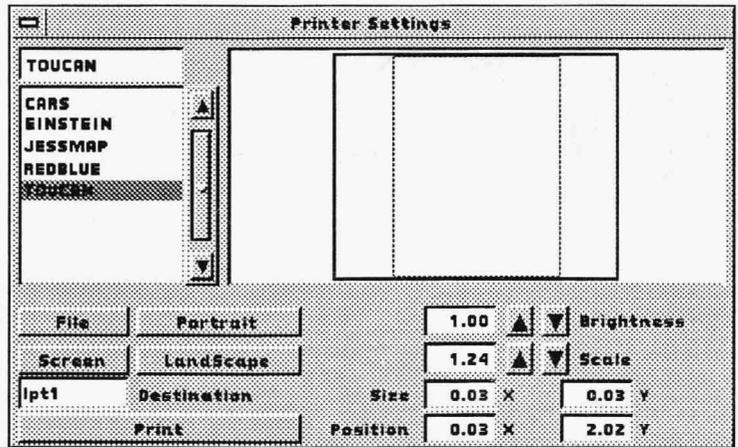
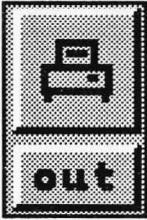


## INTRODUCTION

The Output functions include selections for color and draft printers. Selecting Color Printer on the drop-down menu loads the TEMpra PRINT PRO program if TEMpra PRO is configured to run it (see Appendix). If TEMpra PRO has not been configured for PRINT PRO, you must exit TEMpra PRO and run PRINT PRO as a separate program. When you select Draft Printer, the printer selections become active and the Printer Settings menu is available. The Printer Settings menu controls the appearance of draft prints.

Output provides an alphabetical list of printers available directly from the drop-down menu. If your printer is not one of the first 10 displayed, select the elevator bar at the right of the drop-down menu to reveal more printers. Selecting the printer name activates that printer.

## PRINTER SETTINGS



The Printer Settings menu controls your print's appearance, size, and placement on paper. You also print from this menu. You can select a port for printing if your computer uses a printer port other than LPT1. A preview box shows the size and placement of the print on paper. You can also determine the orientation of the print on your paper.

You can print an image from the screen or from a file. TEMPRA PRO is defaulted to print from the screen. The name of the file on the screen is displayed in the Filename display box and highlighted in the File list box on the Printer Settings menu. Simply adjust the orientation, brightness, scale, size, and position and print your image. To print an image from a file, select the file from the File list box. The filename moves to the Filename display box just above the list box and the Files button below the list box is highlighted. When you select an image file, the Scale fine-tuning button adjusts itself, and the size in the representation box changes to match the size of the image file. Make any other adjustments and print your file. You can also type a filename directly into the File display box. The list of image files displayed in the File list box are the same files displayed in the Files menu in the Disk functions. You may need to check the Files menu to determine if you are working with the correct path and extension before selecting your file in the Printer Settings menu.



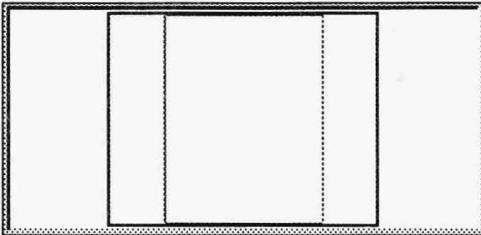
## PRINTER SETTINGS CONTROLS

### File List Box



The File list box displays an alphabetical listing of the image files you can print from TEMPRA PRO. This is useful for printing an image from a file rather than from the screen. The path, extension, and files active in the or Files menu determine which files are listed in the File list box. Directly above the File list box is a File display box. The active (highlighted) file is displayed in this box, and you can type a filename in the box, as well.

### Representation Box



The representation box displays the relative size and position of the printed area on an 8 1/2 by 11 sheet of paper. The outside rectangle in the representation box is the paper the image will be printed on. The left side of the representation box is the top of your paper. The inside box represents the printed area. As you adjust the Size

controls, the inner box changes. When you first select an image to print, TEMPRA PRO sets the controls to produce the largest print possible on the paper available.

### File



Selecting the File button allows you to print an image stored on disk. Selecting a filename from the list box activates the File button. If you previously selected a file for printing, and then selected a screen, selecting the File button overrides the Screen button, causing TEMPRA PRO to print the file in the File display box.

### Screen



Selecting the Screen button allows you to print the image currently on the screen. With this option, the Size settings match the dimensions of your screen. Don't be concerned if the Screen button is selected but the file is listed in the display box is not the name of the image on the screen. TEMPRA PRO will print the image on the screen, not the file listed in the display box.



### Portrait



The Portrait button prints your image oriented vertically on the paper (with the top of the image toward the top of the paper).

### Landscape



The Landscape button prints your image rotated 90 degrees on the paper.

### Destination



The Destination fine-tuning box permits you to change the computer port for printing. The ports recognized for printing are LPT1, LPT2, COM1, and COM2. Generally, the port is LPT1. You can change the port by selecting the Destination fine-tuning box and typing in a new port name. You can also type in a filename rather than a port. Filenames can be any valid DOS filename with a maximum of six characters. Do not include an extension to the filename.

### Print



The Print button starts the printing process. When you select the Print button, TEMPRA PRO immediately starts printing or creating a print file.

### Brightness



The Brightness fine-tuning buttons control the brightness of your prints. The higher the Brightness setting, the lighter the printed image appears on paper. The range for Brightness is .20 to 3.00. A value of .20 produces a very dark print, and a value of 3.00 produces a very light print. The recommended setting to start is 1.00. You can change the setting to produce the best possible print.

### Scale



The Scale fine-tuning button changes the size of the image. When you first select an image to print, TEMPRA PRO sets the scale to the largest print size that will fit on your paper. The initial value for that image is the highest that scale can be. Adjusting Scale from the highest value reduces the image size. The image size in the representation box also decreases.



## Size



The Size display boxes under the Scale fine-tuning buttons show the size of the final print in inches. As you adjust the Scale fine-tuning buttons, the values change in the Size display boxes. The X value represents the horizontal dimension, and the Y value represents the vertical dimension of the image. You cannot make any adjustments to these display boxes.

## Position



The Position display boxes show the position of the image on the paper. As you adjust the Scale fine-tuning buttons, the values change in the Position display boxes. TEMPRA PRO is defaulted to print the image in a centered position on the paper. You can make adjustments to these display boxes by selecting a box and typing in the position information. The X value adjusts the position horizontally on the paper, and the Y value adjusts the position vertically on the paper. The adjustments represent the way the image appears on paper.

## PRINTER SETTINGS HINTS AND COMBINATIONS

Printers vary from model to model and brand to brand. There can even be differences in results from ribbon to ribbon. The settings that work well on one printer may not produce good results on another.

Try different settings and combinations to produce the best draft prints possible with your images. The size of your print on paper determines the print time. Use small print areas for quick printing.

**BUZZ  
SAYS**



*Buzz says he keeps a black-and-white print of each of his images. He keeps a three-ring binder showing his images and their filenames next to his computer. His backup images on floppy disks have a draft print in the disk sleeve so he can see what is on each floppy.*



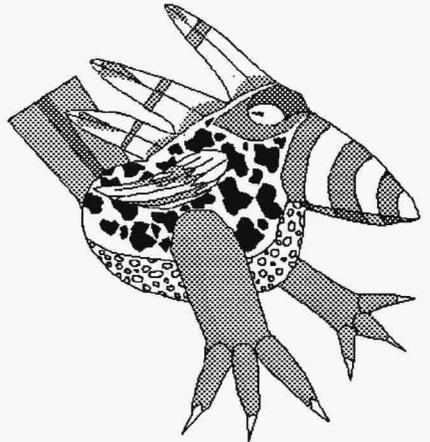
## **PRINTER SETTINGS TUTORIAL**

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1. Load an image onto the screen.
2. Select the OUT functions push-button on the Main Menu Bar to open the Output drop-down menu.
3. Select your printer by moving the cursor to the printer name on the drop-down menu. If your printer's name is not visible, scroll down the list with the elevator buttons.
4. Select the Printer Setting function at the bottom of the drop-down menu.
5. Select the Print button. TEMPRA PRO will print the image on the screen using the default values.

# *Appendices*

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# Appendix A: Printers

TEMPRA PRO supports about 300 printers. The selection of printers is on the Output drop-down menu. This appendix lists those printers. The printers available in TEMPRA PRO may change. If your printer is not on this list, check the drop-down menu for any later additions. The TEMPRA PRO package includes utility programs that may support additional printers. Check the READ.ME file and other material that came in the TEMPRA PRO package.

## TEMPRA PRO PRINTERS

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AcerLaser III G	Sharp JX-730
CalComp 66X4	AEG Olympia NP 80-24
Canon BJC-8x10 B&W	AEG Olympia NP 80SE
Canon BJC-8x10 Color	AMT Office Printer
Canon CJ10	AST TurboLaser
Polaroid	ATT 475
Color PostScript	ATT 495 Laser
Grey Postscript	Acer LP-76
Grey PS Level 2	Alps ALQ200, ALQ224E
HP DJ 500C B&W	Alps ALQ300, ALQ324E
HP DJ 500C Color	Alps ASP160
HP LJ II 512K	Alps Allegro 500 24-pin
HP LJ II 1 meg	Alps Allegro 500XT
HP LJ II 2 meg+	Alps P2000, P2100
HP LJ III 512K	Alps P2400C
HP LJ III 1 meg	Anadex DP-6500
HP LJ III 2 meg	Anadex DP-9000 Series
HP Paintjet	Anadex WP-6000
Seiko CH-4100	Apple ImageWriter II
Seiko CH-55X4, PX3	Apple LaserWriter NT
Seiko CH-55X4, PX1	Apple LaserWriterII NT
Seiko CH-6104	Apple LaserWriterII NTX

Brother HL-4  
Brother HL-8  
Brother M-1009, M-1109  
Brother M-1509, M-1909  
Brother M-1924L  
Bull CompuPrint 4/22  
Bull CompuPrint 4/23  
Bull CompuPrint 4/40  
Bull CompuPrint 4/43  
Bull CompuPrint 4/54  
C-Tech C-515  
C-Tech C-610 Plus  
C-Tech C-610C Plus  
C-Tech C-645  
C-Tech ProWriter C-240  
C-Tech ProWriter C-245  
C. Itoh 1550  
C. Itoh 8510 ProWriter  
C. Itoh 8600  
C. Itoh C-310 CP  
C. Itoh C-310 EP/CXP  
C. Itoh C-715F  
C. Itoh C-815  
C. Itoh CI-3500  
C. Itoh Jet-Setter II  
C. Itoh ProWriter II  
CIE CI-5000  
CalComp 66X4  
Canon BJ-10e  
Canon LBP-8II/8IIT  
Canon PW-1040A  
Canon PW-1156A  
Centronix - Most Models  
Centronix GLP II  
Citizen 120D, 180D  
Citizen 200GX, GSX-140  
Citizen MSP-10/15  
Citizen MSP-20/25  
Citizen MSP-45  
Citizen MSP-50/55  
Citizen Tribute 224  
Commodore MPS 1250  
Copal Writehand 6800  
Cordata LP300/300X  
DEC LA 324, DEC LA 75  
DEC LA100, DEC LA50  
DEC LJ252, DECWriter IV  
DataProducts 9044  
DataProducts 8052C  
DataProducts 9030  
DataProducts LZR-1230  
DataProducts LZR-2450D  
DataProducts LZR-650  
DataProducts P-132  
Destiny Laseract I  
Diconix 150  
Epson DFX-8000  
Epson EPI-4000  
Epson EX-800, FX-100  
Epson FX-1050, FX-286e  
Epson FX-80, FX-80e  
Epson FX-85, FX-850  
Epson JX-80 (B/W)  
Epson LQ-1000, LQ-1010  
Epson LQ-1050, LQ-1500  
Epson LQ-2500 24-pin  
Epson LQ-2500 8-pin  
Epson LQ-500  
Epson LQ-850  
Epson LQ-860  
Epson LX-80  
Epson LX-800

Epson MX-100  
Epson MX-80  
Epson RX-80  
Everex Abaton LaserScript  
Facit 4512  
Facit B1200  
Facit B3450  
Facit B3450  
Facit P6060  
Fortis DM3215  
Fortis/Dynax DH-45  
Fortis/Dynax DM1310  
Fortis/Dynax DM2015  
Fujitsu DL-2400C, DL-2600  
Fujitsu DL-3400, DL4600  
Fujitsu DX-2200-F/-I  
Fujitsu DX-2400 (B/W)  
Fujitsu Dotmax 24D  
Fujitsu RX7100PS Plus  
Fujitsu RX7100PS/2  
Genicom 3180/3184  
Genicom 3304/3404  
Genicom 3840  
HP DeskJet  
HP LaserJet, 2000  
HP LaserJet Series II  
HP LaserJet Series IID  
HP LaserJet Series III  
HP LaserJet Series IIP  
HP LaserJet+ and 500+  
HP PaintJet  
HP PaintJetXL  
HP QuietJet Plus  
HP ThinkJet  
IBM 3852-2 Jet  
IBM LaserPrinter E  
IBM PC Graphics Printer  
IBM ProPrinter  
IBM ProPrinter II/XL  
IBM ProPrinter X24/XL24  
IBM QuietWriter II  
IBM QuietWriter III  
IDS IDS-480, IDS-560  
IDS P132 , IDS P80  
JDL-850  
Juki 5510  
Kyocera F-1000A  
Kyocera F-1010  
Kyocera F-1800A  
Kyocera F-2010  
Kyocera F-3010  
LaserImage 1000  
LaserPro Silver Express  
MT Spirit-80  
Mannesmann Tally 130/24  
Mannesmann Tally 130/9  
Mannesmann Tally 131/24  
Mannesmann Tally 131/9  
Mannesmann Tally 906PS  
Mannesmann Tally MT-290  
Mannesmann Tally MT-905  
Mannesmann Tally MT-910  
Mitek 130T  
NCR 6417-0101, 6417-0201  
NCR 6436-0501  
NEC LC-890 Laser  
NEC PinWriter P2/P3  
NEC PinWriter P2200 180  
NEC PinWriter P2200 60  
NEC PinWriter P5/6/7 180  
NEC PinWriter P5/6/7 60  
NEC PinWriter P6200

NEC PinWriter P6300  
NEC SilentWriter LC-860+  
NEC SilentWriter2 90  
NLQ SC-1200 & 1500  
NewGen TurboPS/360  
NewGen TurboPS/480  
Nissho NP-2410  
Nissho NP-910  
Okidata 2350/2410  
Okidata 2410 (IBM)  
Okidata 320/321  
Okidata 390/391  
Okidata 393/393C  
Okidata Laserline 6  
Okidata ML192/193  
Okidata ML192/193 (IBM)  
Okidata ML292 (IBM)  
Okidata ML84  
Okidata ML92/93  
Okidata ML92/93 (IBM)  
Okidata Microline 380  
Okidata Microline 390  
Okidata Microline 391  
Okidata Microline 393  
Okidata OkiLaser 400  
Okidata OkiLaser 800  
Okidata OkiLaser 820  
Okidata OkiLaser 840  
Okidata Okimate 20 (IBM)  
Olivetti DM105S  
Olivetti DM309E  
Olivetti DM600S  
Olivetti PG306  
Olympia Laserstar 6  
Packard Bell PB9500  
Panasonic KX-P1080  
Panasonic KX-P1090  
Panasonic KX-P1091  
Panasonic KX-P1092  
Panasonic KX-P1124  
Panasonic KX-P1180  
Panasonic KX-P1524  
Panasonic KX-P1592  
Panasonic KX-P1595  
Panasonic KX-P1624  
Panasonic KX-P1654  
Panasonic KX-P1695  
Panasonic KX-P3131  
Panasonic KX-P4420  
Panasonic KX-P4450  
Printronix S7024  
QMS Kiss Plus  
QMS PS-2210  
QMS PS-410  
QMS PS-810  
QMS Smart Writer  
Quadram QuadLaser  
Qume CrystalPrint  
Qume LaserTen Plus  
Ricoh PC Laser6000 - 100  
Ricoh PC Laser6000 - 300  
Seiko CH-55X4/CH-6104  
Seikosha GP-100A  
Seikosha SL-90  
Seikosha SP-1000A  
Seikosha SP-1600A1  
Seikosha SP-2000  
Seikosha Sk-3000AI (B/W)  
Sharp JX-730  
Star LaserPrinter 8II  
Star Micronix Delta 10  
Star Micronix Gemini 10x

Star Micronix Gemini 15x  
Star Micronix NB-15, ND-15  
Star Micronix NX-10  
Star Micronix NX-1000  
Star Micronix NX-1500  
Star Micronix NX-2400  
Star Micronix NX-2410  
Star Micronix NX-2415  
Star Micronix Radix 10  
Star Micronix XR-1000  
TI 850, TI 855  
TI 857 , TI 8930  
TI OmniLaser 2015  
TI MicroLaser  
Talaris T810  
Tandy DMP 130, DMP 2130  
Tandy DMP 240, DMP 440  
Tandy DMP-2100 (IBM)  
Tandy DMP-2110  
Tandy DMP-430 (IBM)  
Tandy LP-1000  
Tektronix 4696  
Tektronix ColorQuick  
Toshiba 1350  
Toshiba 1351 (24p) & (8p)  
Toshiba P321, P321SL/SX  
Toshiba P351, P351C  
Toshiba PageLaser 6 & 12

# Appendix B: Color Values

TEMPRA PRO uses numeric values to represent colors. The values are on the Ink Color menu in the Color fine-tuning buttons. Each color model has three sets of numbers that define a specific color. These tables show the values for five colors in each color model used in TEMPRA PRO. The color values change when you use various displays: 8-bit (256 colors), 16-bit (32,000 colors), and 24-bit (16,000,000 colors).

## 8-Bit Display Boards (256 Colors)

<b>RGB</b>	<b>Red</b>	<b>Green</b>	<b>Blue</b>	<b>CMY</b>	<b>Cyan</b>	<b>Magenta</b>	<b>Yellow</b>
Red	63	0	0	Red	0	63	63
Green	0	63	0	Green	63	0	63
Blue	0	0	63	Blue	63	63	0
Black	0	0	0	Black	63	63	63
White	63	63	63	White	0	0	0

<b>HLS</b>	<b>Hue</b>	<b>Luminance</b>	<b>Saturation</b>	<b>HSV</b>	<b>Hue</b>	<b>Saturation</b>	<b>Value</b>
Red	63	0	0	Red	0	63	63
Red	0	49	100	Red	0	100	100
Green	33	49	100	Green	35	100	100
Blue	66	49	100	Blue	65	100	100
Black	0-100	0	0-100	Black	0-100	0	0-100
White	0-100	100	0-100	White	0-100	100	0

### 16-Bit Display Boards (32,000 Colors)

<b>RGB</b>	<b>Red</b>	<b>Green</b>	<b>Blue</b>	<b>CMY</b>	<b>Cyan</b>	<b>Magenta</b>	<b>Yellow</b>
Red	31	0	0	Red	0	31	31
Green	0	31	0	Green	31	0	31
Blue	0	0	31	Blue	31	31	0
Black	0	0	0	Black	31	31	31
White	31	31	31	White	0	0	0

<b>HLS</b>	<b>Hue</b>	<b>Luminance</b>	<b>Saturation</b>	<b>HSV</b>	<b>Hue</b>	<b>Saturation</b>	<b>Value</b>
Red	0	49	100	Red	0	100	100
Green	33	49	100	Green	35	100	100
Blue	66	49	100	Blue	65	100	100
Black	0-100	0	0-100	Black	0-100	0	0-100
White	0-100	100	0-100	White	0-100	100	0

### 24-Bit Display Boards (16,000,000 Colors)

<b>RGB</b>	<b>Red</b>	<b>Green</b>	<b>Blue</b>	<b>CMY</b>	<b>Cyan</b>	<b>Magenta</b>	<b>Yellow</b>
Red	255	0	0	Red	0	255	255
Green	0	255	0	Green	255	0	255
Blue	0	0	255	Blue	255	255	0
Black	0	0	0	Black	255	255	255
White	255	255	255	White	0	0	0

<b>HLS</b>	<b>Hue</b>	<b>Luminance</b>	<b>Saturation</b>	<b>HSV</b>	<b>Hue</b>	<b>Saturation</b>	<b>Value</b>
Red	0	49	100	Red	0	100	100
Green	33	49	100	Green	35	100	100
Blue	66	49	100	Blue	65	100	100
Black	0-100	0	0-100	Black	0-100	0	0-100
White	0-100	100	0-100	White	0-100	100	0

---

# *Appendix C: TEMPRA Print Pro*

## **INTRODUCTION**

---

The TEMPRA PRINT PRO program consists of a main program, PRINTPRO.EXE, which is a menu-driven print program for VGA and compatible displays, and two utilities: PRINTCOM.EXE, a DOS command line print program, and PRINTSRV.EXE, a DOS print server program for networked computers.

TEMPRA PRINT PRO supports a number of different color printers. Mathematica, Inc. is continually adding printers to the list supported by TEMPRA PRINT PRO. As these printers become available, additional documentation can be found in the READ.ME file or in an addendum to the manual.

## MENU-DRIVEN PRINT PROGRAM (PRINTPRO.EXE)

PRINT PRO is a menu-operated print program. See Appendix A for a list of supported printers. For information on installing, adding supplies to, or operating your printer, see your printer manual.

Printers have different capabilities. If your menu doesn't have certain features, those features are not available on your printer. PRINT PRO can be configured for a specific manufacturer's family of printers. Individual models of printers within the manufacturer's family may not support all the features available on the menu.

PRINT PRO can be run as a stand-alone program or directly from TEMPRA PRO. To run stand-alone PRINT PRO, go to the TEMPRA subdirectory. Type **PRINTPRO** and press Enter to start the program. The program needs to know what printer and display board you are using. Select the correct printer and display and press Enter. If you change the hardware configuration or you make a mistake, restart PRINT PRO by typing **PRINTPRO -R** and pressing Enter.

To run PRINT PRO directly from within TEMPRA PRO, you must execute the **TPROLINK.BAT** file supplied before running TEMPRA PRO (this activates the color printer menu). In the TEMPRA subdirectory, type **TPROLINK** and press Enter to start TEMPRA PRO (if you haven't already configured TEMPRA PRO, the configuration menu appears). To use PRINT PRO, select Output functions on the TEMPRA PRO Main Menu Bar. Select "Color Printer" from the Output drop-down menu to start PRINT PRO. (If you haven't already configured PRINT PRO, the configuration menu appears.) This allows you to print whatever was on your TEMPRA PRO canvas when you selected PRINT PRO. You can also select files from disk for printing. Exiting PRINT PRO under TPROLINK returns you to TEMPRA PRO. When using TPROLINK, ensure PRINT PRO is configured for the same display adapter as TEMPRA PRO.

**BUZZ  
SAYS**

*If you don't want color printer support, you don't need to run TPROLINK. No menu appears when you select Color Printer in the TEMPRA PRO Output menu.*

When you configure PRINT PRO after selecting a printer, a menu asks: "Bypass BIOS when printing? Y/N." Answering "Y" bypasses your system's BIOS. DOS uses the BIOS to control printing. This allows PRINT PRO direct access to your printer hardware, which speeds up printing. BIOS might produce conflicts between PRINT PRO and DOS or Windows printing. If you don't perform other print functions on your system while using PRINT PRO, bypass the BIOS. Answering "N" forces PRINT PRO to use your system's BIOS for printing. This slows PRINT PRO, but avoids problems with other DOS print tasks. If you run Windows and have problems using PRINT PRO with BIOS bypassed, reconfigure PRINT PRO and don't bypass the BIOS.

To configure PRINT PRO and/or TPROLINK to run in Windows, follow the instructions in the first chapter of this manual. PIF and icon files are provided for Windows users. To run only TPROLINK in Windows, replace the TEMPRA.EXE file with TPROLINK.BAT and TEMPRA.ICO with TPROLINK.ICO when following the instructions for loading TEMPRA PRO into Windows.

## **TEMPRA PRINT PRO MENU**

TEMPRA PRINT PRO has one main menu containing the majority of the controls. To change a control or adjust a value, you use the mouse to move the cursor to the control and press the left mouse button to select it. Some menu choices are toggles. A toggle turns itself on (becomes active) and turns others off (becomes inactive) when selected.

Some functions can be adjusted with fine-tuning buttons. These buttons have an adjustable numeric value. The buttons have up-and-down arrows to adjust the value higher or lower. As you press the fine-tuning buttons, you see the value in the adjacent box change. You may also manually change the value by placing the cursor in the box and pressing Select. The box changes color. You can then type in the value you want and press Enter.

Along the top of the TEMPRA PRINT PRO screen is a row of buttons (menu row). Each button in the row causes another menu to appear on the screen or causes TEMPRA PRINT PRO to take a direct action. The Local and Net buttons are toggles. If one is active, the other is inactive.

The Printing controls are located on the left side of the menu. They allow you to adjust the appearance of the final print, the size of paper, the position of the print on the paper, and the number of copies to be printed. The Crop button replaces the menu with the image to be printed or a representation of the image. Some print controls allow you to adjust the print outline on the representation box or let you move the print outline within that box. The bottom left side of the menu shows a thumbnail facsimile of the image to be printed.

On the right side of TEMPRA PRINT PRO menu is a representation box showing the paper to be used for printing. The numbers on the right and bottom of the box indicate inches. You may use these marks as a quick way to estimate the size of your final prints. You also may use this area of the menu to preview the location of the final print.

## Menu Row

The menu row has six buttons. Each button provides a different function. They are: Disk, Queue, Print, Local, Net, and Exit.

## Disk

Selecting the Disk button opens a Disk menu in the middle of the screen. You use the Disk menu to select the images to print. The left side contains a list of images to print. The left side contains a list of images and the right side contains a Disk navigator. To select an image from the left side of the Disk menu, move the cursor to the image filename and press Select (the left mouse button). The image appears as a thumbnail facsimile of the image in the menu. The size of the image in the print representation box changes to match the image and the name of the image file appears in the box named Files. TEMPRA PRINT PRO recognizes the following types of image files:

- .GIF-CompuServe
- .TGA-TrueVision Targa images
- .WIN-TrueVision Targa windows
- .TIF-Tagged Image File Format Images (Aldus/Microsoft)
- .PCX-PC Paintbrush
- !.M and !\_M - IBM Audio Visual Connection

The Disk navigator allows you to change disks and directories. To change to a different disk drive, move the cursor to the letter of the drive and press Select. When you change to a different disk drive, you will be in the root directory of that drive. The directories on a disk drive are listed below the drive letters. To select a directory, move the cursor to that directory and press Select. If you are in a directory and want to go to the parent of that directory, select the “..” symbol. The “..” is located below the disk drive letters and above the directory names.

**Queue**

The Queue button shows what images are scheduled to be printed by the network server. If the Queue is empty, selecting the Queue button opens a menu box telling you that there are no images to be printed. If there are images waiting to be printed, the menu box lists the names of images and their originator. You may delete an image from the Queue by moving the cursor to the name of the image and pressing Select. A box appears asking you to confirm deleting the image. If you are not the originator of the image, a warning appears telling you the image was not originated by you on your computer and that you may not delete the image from the queue. Computer networks that share a printer are likely to have images from a number of people in the queue.

**Print**

The Print button starts the printing process by TEMPRA PRINT PRO and your printer. If the printing is sent over a network, TEMPRA PRINT PRO sends the proper commands and image data over the network to the printer. If a printer is attached to your computer and local is highlighted, the printer starts receiving data immediately.

**Local**

The Local button designates a printer attached to your computer to receive data from TEMPRA PRINT PRO. The Local button toggles with the Net button. TEMPRA PRINT PRO must be set to either Local or Net, but not both. If you select the Local button when it is active (red), a menu appears on your screen. The menu provides a space for you to enter the number of the port where your printer is attached to the computer. The ports can be LPT1 through LPT4. To select a port, simply type in the port number. To select LPT2, type the number "2" when the port selection menu is on the screen.

**Net**

The Net button tells TEMPRA PRINT PRO that printing will go over a network to be printed by a computer running PRINTSRV.EXE. The Net button toggles with the Local button. TEMPRA PRINT PRO must be set for either Local or Net, but not both. If you select the Net button when it is active (red), a menu appears on the screen. The menu provides a space for you to type in the location of the printer on the network. The printer can be located on any other computer that is part of a peer-to-peer network. This is different than simply entering the number of the port on your computer. Any valid network subdirectory may be entered as the location of the printer. If you are unsure of how to type the address, your network administrator will be able to help.

**Exit**

The Exit button ends your session with TEMPRA PRINT PRO and returns you to DOS. When you select the Exit button, a menu appears asking if you want to leave TEMPRA PRINT PRO. You may select Yes to leave TEMPRA PRINT PRO and return to DOS or No to continue working with TEMPRA PRINT PRO.

**File**

The File button is located under the menu row. When you select the File button, a menu appears on your screen. You may type the name of a file into the menu. If TEMPRA PRINT PRO can find the file, it displays a representation of the image in the thumbnail facsimile box. The paper representation box adjusts and the image is available for printing. The name typed into the File button menu must include the file name and its extension. Typing "IMAGE" will not work; however, "IMAGE.TGA" will. If the image you want is located in another subdirectory, you must type in the subdirectory path before the full image name.

### **Landscape - Portrait**

The Landscape or Portrait buttons are toggles. You may print your image as a landscape image or as a portrait image. With a landscape image, the image is horizontal on your paper. With a portrait image, the image is vertical on the paper. When you select one, the other toggles off. Some printers won't support this option, and it won't appear on the menu.

### **Crop**

The Crop button allows you to crop (select a portion) of the image to be printed. The image must be loaded into TEMPRA PRINT PRO and a thumbnail facsimile must be visible on the menu. When Crop is selected, the menu disappears. The cursor can be placed on the top left point of the area to be included in the final print. When the cursor is in the correct position, press Select (the left mouse button). As you move the mouse, a rectangle forms over the image. When the rectangle includes the area of the image you want in the final print, press Select again. When you select the second time, the menu returns to the screen and the thumbnail facsimile box shows the cropped image. The cropped image is the one that will be printed by TEMPRA PRINT PRO.

### **Mirror**

The Mirror button causes PRINT PRO to print the image as a mirror image. A mirror image has the left side of the image on the right side of the print. Mirror reverses the image (including text). A mirrored image can be used when the print is transferred from paper to another medium.

### **Position**

The Position button allows you to move the position of the image on the paper. When the position button is selected, the print area in the representation box on the right of the menu can be moved. Moving the mouse moves the print area. When the image rectangle is in the correct position, selecting with the mouse stops the movement and places the image at the location on the paper. If the image is the same size as the paper, you cannot move the image on the paper.

**Fit**

The Fit button fits an image onto the paper. The largest dimension of the image becomes the largest dimension on the final print. The setting of the Landscape and Portrait buttons change the area of the final print. An image that is wider than it is high produces a larger print area when it is printed in the landscape mode. The Fit button expands an image to fill the available paper. If the scale of an image has been changed, the Fit button sets the scale to 100.

**Paper Size**

TEMPRA PRINT PRO supports four paper sizes. The Paper Size buttons are toggles. Only one paper size can be active at a time. The four Paper Size buttons and their paper sizes are:

A = 8.5 x 11 inches

A4 = 8.27 x 11.7 inches

A3 = 11.7 x 16.54 inches

B = 11 x 17 inches

**Dot Type**

The three Dot Type buttons are toggles for choosing the dither pattern used by TEMPRA PRINT PRO. A dither pattern is the way TEMPRA PRINT PRO mixes the three primary colors (cyan, magenta, and yellow) to make a print. The three types of dither patterns available are dispersed, spiral, and newspaper. There is no best dither pattern for all prints. The type of image, the colors in the image, and your taste determine the best dither pattern to use.

**Dot Size**

The Dot Size buttons determine the number of printer dots used for each image pixel. The number selected in the Dot Size buttons determines the number of dots used in the dither pattern. When one dot is selected, the number of dots used in the dither pattern. When one dot is available, TEMPRA PRINT PRO can print only a few colors. The are red, green, blue, cyan, magenta, yellow, white, and black. A Dot Size of 8 means the dither pattern contains 8 dots of printer paint across and 8 down per pixel to be printed. The best dot size depends on the type of image being printed. The best dot size depends on the type of image being printed, the size of the printed image, the colors in the image, and your taste.

**Scale**

The Scale button is a fine-tuning button. You adjust the value in the scale by selecting the up or down arrows next to the scale number. The range for scale is 25 to 100. As the scale number decreases, the size of the print on the paper decreases. When the number in the Scale fine-tuning box changes, the images size in the representation box changes. To manually set the scale, move the cursor into the Scale button display area and press Select. You can then type in the number for scale. If the Fit button is selected, the scale is automatically set to 100.

**Copies**

The Copies button determines the number of prints made from each image. The Copies button is a fine-tuning button. You must enter the number of copies directly in the box or use the arrow keys beside the button to set the number of copies. The range for number of copies is 1 to 100.

**Gamma**

The Gamma button is also a fine-tuning button. Gamma is the method used to correct the difference between the image displayed on your monitor and the image printed on a sheet of white paper. Images on a monitor radiate light and images on paper reflect light. When the Gamma is set to a high level, the print appears darker and saturated. If the Gamma is set to a low number, the image appears light and washed out.

**Bright**

The Bright button controls the brightness of the final print. The brightness on a print is similar to the brightness control on a computer display. The values for the Bright fine-tuning button ranges from .2 to 2.0. Brightness set to a low number produces a darker print and brightness set to a high number produces a lighter print.

**RECOMMENDED SETTINGS** 

---

When you first start using TEMPRA PRINT PRO, the following are recommended settings. However, you can adjust the settings to print your images best.

COPIES	1
GAMMA	1
BRIGHTNESS	1
ORIENT	Portrait
DITHER	Spiral
DOT SIZE	8
WIDTH	A

## COMMAND LINE PROGRAM (PRINTCOM.EXE)

The MS-DOS or PC-DOS command line program, PRINTCOM.EXE, is a simple program for printing images. The program has command line switches to control the printing process. Make sure you put a space between the separate switches, the image name, and the program name. The command to print an image is:

```
C:>PRINTCOM FILENAME PRN_NAME [SWITCHES]
```

Filename is any DOS image filename including extension. PRN\_NAME can be LPT1 through LPT4 or a DOS filename. Switches are the controls for printing. Each switch is preceded by a forward slash. They are:

```
/s dot_size => (1,2,4, or 8) default=8  
/d pattern => (0=dispersed, 1=spiral, 2=newspaper) default=2  
/c copies => (1-99) default=2 /g gamma => (.2-2.6) default=1.000000  
/b brightness => (.2-2.0) default=1.000000  
/p => portrait orientation  
/l => landscape orientation (default)
```

To print an image called MOUNTAIN.TGA to LPT1 with two copies, the command line is:

```
C:>PRINTCOM MOUNTAIN.TGA LPT1 /C 2
```

To print the same image with a landscape orientation, gamma set at .8, and a dot size of 4, the command line is:

```
C:>PRINTCOM MOUNTAIN.TGA LPT1 /L /G .8 /S 4
```

To print the same image to a file named MYFILE with the same settings, the command line is:

```
C:>PRINTCOM MOUNTAIN.TGA MYFILE /L /G .8 /S 4
```

If there are no switches on the command line, the PRINTCOM.EXE program uses the following defaults:

COPIES=1  
GAMMA=1.00  
BRIGHTNESS=1.00  
ORIENT=0 (landscape)  
DITHER=1 (spiral)  
DOT\_SIZE=8 (8x8 dither)  
WIDTH=0 (A size)

To create your own set of default settings, create a file called DEFAULT.ATT. The file is an ASCII file containing a single line for each switch. Following the switch name is an equal sign and the value for the switch. The format for the DEFAULT.ATT file is:

COPIES=1	[Where Copies=> 1 to 100]
GAMMA=1.20	[Where Gamma=> .2 to 2.6]
BRIGHTNESS=1.0	[Where Brightness => .2 to 2.0]
ORIENT=1.00	[Where Orientation => 0 (landscape), 1 (portrait)]
DITHER=1	[Where Dither => 0 (dispersed), 1 (spiral), 2 (newspaper)]
DOT_SIZE=8	[Where Dot Size => 1,2,4,8]
WIDTH=0	[Where Width => 0=A, 1=A4, 3=B, 4=A3]

If PRINTCOM.EXE is run without a filename or switches, it produces a list of the switches and their defaults. The list looks like this:

```
IPU Copyright (c) Mathematica, Inc. 1990, 1991 Version 1.0 April
1991 Image Print Utility for CalComp ColorMaster-Plus 6603 & 6613
Usage: PRT66X3.EXE image_file printer_name [options]
Valid Options:
/s dot_size => (1,2,4, or 8) default=8
/d pattern => (0=dispersed, 1=spiral, 2=newspaper) default=2
/c copies => (1-99) default=2
/g gamma => (.2 - 2.6) default=1.000000
/b brightness => (.2 - 2.0) default=1.000000
/p => portrait orientation /l => landscape orientation (default)
```

---

## PRINT SERVER PROGRAM (PRINTSRV.EXE)

If you use a dedicated computer as a print server, you run the program PRINTSRV.EXE on the server. PRINTSRV.EXE has only one option: the port name for the printer. The valid port names are LPT1 through LPT4. When PRINTSRV.EXE is operating, it should be the only program operating on the computer. PRINTSRV.EXE receives the image file and an ".ATT" file from the network. It then prints the image using the settings in the .ATT file. If there is no .ATT file, PRINTSRV.EXE uses the default settings. To run PRINTSRV.EXE with a printer attached to LPT1, the command is:

```
C:>PRINTSRV LPT1
```

PRINTSRV.EXE should not be used to print an original image or in place of the menu or command line print programs. PRINTSRV.EXE erases images after they are printed. The automatic erasing of the image file on the print server machine conserves disk space. PRINTSRV.EXE should be run only on dedicated print server computers on a network.

---

## *YOUR NAME AND YOUR PRINT PROGRAM*

TEMPRA PRINT PRO assigns a name to each person who sends an image to be printed. The name is the DOS Vol\_ser name assigned to your disk drive. Many computer users do not assign a Vol\_ser name when formatting their disks. If this is true for your computer or you do not know the Vol\_ser name, TEMPRA PRINT PRO can be given a specific name. Do this with the DOS "SET" command. The command is:

```
C:>SET IPU_NAME=[8 character name]
```

To tell TEMPRA PRINT PRO that the originator is the "ART-DEPT," the command would be:

```
C:>SET IPU_NAME=ART-DEPT
```

---

# Appendix D: Files

You can store images, clippings, and editable features (such as pens and patterns) on file in TEMPRA PRO. Each type of file has a unique file extension. You create some files as you use TEMPRA PRO, while others are included in the TEMPRA PRO package.

---

## FILE EXTENSIONS

---

Extensions recognized by TEMPRA PRO are:

- Image and clipping files—.TGA, .WIN, .TIF, .GIF, .PCX, .-IM, .!IM, .BMP, .EPS (write only), .PCC
- Font Files—.BSF
- Pen files-.PEN
- Pattern files-.TGA, .TIF, .GIF, .PCX, .WIN, . \_IM, .!IM, .PTN
- Palette files—.PAL
- Mask files—.MSK

The image, clipping, and pattern files have certain characteristics that determine the number of colors available and if the colors can be compressed. These characteristics are:

Extension	8-Bit	16-Bit	24-Bit	Compression
.TGA	Yes	Yes	Yes	Option
.WIN	Yes	Yes	Yes	Option
.TIF	Yes	No	Yes	Option
.GIF	Yes	No	No	Always
.PCX	Yes	No	No	Always
.-IM	Yes	No	No	Option
.!IM	Yes	No	No	Option
.PTN	Yes	Yes	Yes	Always
.PCC	Yes	No	No	Always
.BMP	Yes	No	Yes	Never
.EPS	No	No	Yes	Never

---

# Appendix E: Utilities

TEMPRA PRO includes a set of utilities that provide additional capabilities. These utilities are: MCAPTURE and CMAP.

## MCAPTURE

---

Mcapture allows you to capture a graphic image while running another program that is operating in graphics mode. Mcapture operates with MS-DOS 3.0 or higher. The image you capture with Mcapture can be loaded into TEMPRA PRO and enhanced with all of TEMPRA PRO's painting tools and functions.

Mcapture installs itself in memory and waits for you to press a "hotkey" sequence. When it detects this sequence of keystrokes and if the PC's display is in the graphics mode, it copies the contents of the display into a file for use with TEMPRA PRO. The file has a default filename called MATH\_?.TGA. The question marks represent the last two characters of the filename and turn into a number when you Mcapture a file. The filename starts with "01" and the number increases consecutively each time you Mcapture a file. So, if the first file you Mcapture is called MATH\_01.TGA, the second file is MATH\_02.TGA, the third file is MATH\_03.TGA, and so on. You can change the default filename by adding the desired name (up to 6 characters) on the command line when you execute Mcapture.

The default keystroke sequence is ALT-G (press ALT and "G" keys). Change this sequence to SHIFT-PRINTSCRN by adding -W to the command line when you execute Mcapture. This is necessary when running programs like MS-Windows and its applications. If you use the -W option and want an alternate filename, you must specify the

filename immediately after the -W. You can remove Mcapture from memory by executing it a second time and adding -U to the command line. Mcapture supports the following graphics mode:

<b>EGA</b>	320 x 200, 16 colors	<b>VGA</b>	320 x 200, 256 colors
	640 x 200, 16 colors		640 x 400, 256 colors
	640 x 350, 16 colors		640 x 480, 256 colors
	640 x 480, 16 colors		
	800 x 600, 16 colors		
	800 x 600, 2 colors		
	1024 x 768, 16 colors		

To start Mcapture using the ALT-G key sequence to capture files named MATH\_01.TGA, MATH\_02.TGA, and so on, go to the directory containing the Mcapture utility and type:

**C:>MCAPTURE**

To start Mcapture using the ALT-G key sequence to capture files with specified filenames, go to the directory containing the Mcapture utility and type:

**C:>MCAPTURE FILENAME**

For example, to capture a file called "BARNEY\_01.TGA", you would type:

**C:>MCAPTURE BARNEY**

To remove Mcapture from memory, type:

**C:>MCAPTURE -U**

To start Mcapture using the SHIFT-PRINTSCRN key sequence to capture files named MATH\_01.TGA, MATH\_02.TGA, and so on, you would type:

**C:>MCAPTURE -W**

To start Mcapture using the SHIFT-PRINTSCRN key sequence to capture files with specified names, you would type:

```
C:>MCAPTURE -WFILENAME
```

For instance, to capture a file called "BARNEY\_01.TGA" using the SHIFT-PRINTSCRN key sequence, you would type:

```
C:>MCAPTURE -WBARNEY
```

## CMAP

---

Cmap changes the palette ("color map") on an image so that the palette is compatible with the 8-bit Targa file format. The files used as input to Cmap include Targa (TGA) files with 16 or more bits per pixel, TIFF files, PIC, and PCX files. Reducing the number of colors per pixel allows you to combine parts of images as windows. You can display an image on an 8-bit display board without using a dither pattern.

Cmap contains a number of options that affect the quality of color produced in the 8-bit TGA image. These options optimize the image for different uses. For instance, the "F" option produces colors that are best for flesh tones. The default palette size is 256 colors. Because color tastes vary, you should experiment with Cmap to determine the best options for each color image. To use Cmap, type the command line:

```
C:>CMAP INPUTFILE.EXT OUTPUTFILE [-SMAP_SIZE] [-MMODE] MAP_SIZE = 64 to 256
```

- S Pick the most populous colors in a color model with 4 bits per red, green, and blue.
- R Break the color spectrum into 64 regions, assign the most available palette entries to flesh tones, and pick the most populous colors in each region.

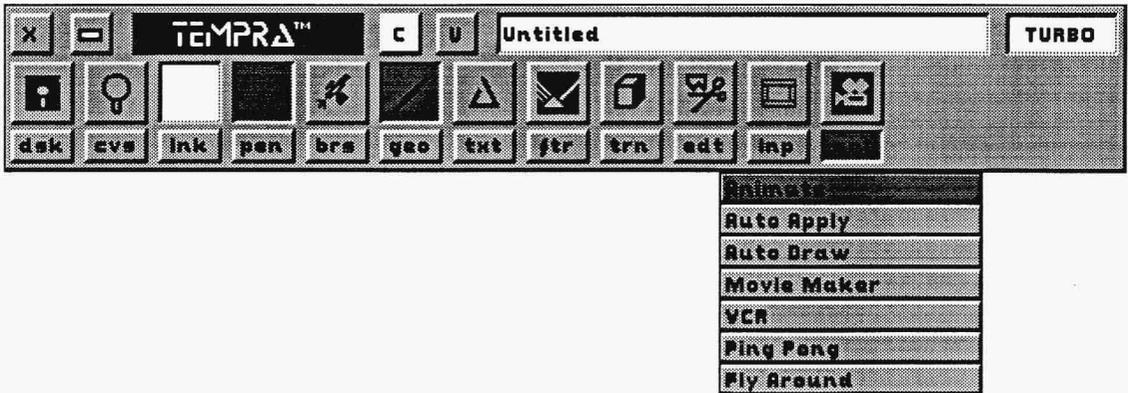
- Q Break the color spectrum into 64 regions, assign the available palette entries to the regions with the most colors, and pick the most populous colors in each region.
- L Pick the most populous colors in a color model with 5 bits per red, green, and blue, removing those colors adjacent to the colors selected from future selections.
- F Break the color spectrum into 64 regions, assign the most palette entries to flesh tones, and pick the most populous colors in each region to fill out the palette.
- D Break the color spectrum into 64 regions, assign the most available palette entries to the most populous regions, and pick the most populous colors in each region.

To convert a 16-bit Targa file called FRED.TGA to an 8-bit output file called GEORGE.TGA with many flesh tones and only 150 colors in the palette, the command line would be:

```
C:>CMAP FRED.TGA GEORGE -S150 -MF
```

---

# Appendix F: TEMPRA Turbo Animator



TEMPRA Turbo Animator has two powerful features. The **Turbo Charger** feature turns TEMPRA PRO into a 32-bit protected mode imaging program. This increases the speed of TEMPRA PRO 2 to 5 times over the standard mode. The **Animation Editor** lets you edit existing 8-bit .FLC or .FLI animation files and 16-bit .FLX animation files. You can create original 8-bit .FLC files or 16-bit .FLX files using all of TEMPRA PRO's paint tools. The Animation Editor includes a function called **Movie Maker**, which lets you use a video camera to create time-lapse photography .FLC or .FLX files and store them to hard disk. There is also a **VCR** function which allows you to create animation files from a videotape or play animation files from your hard disk and record them to videotape.

## INSTALLATION

---

If the Turbo Animator was included with your copy of TEMPRA PRO, install TEMPRA PRO first and then install the Turbo Animator. When you are finished installing TEMPRA PRO and the Turbo Animator, make sure your original disks are stored in a safe place.

To run the Turbo Animator, your 386/486 computer should have a minimum of 2 megabytes of memory—although 4 megabytes of available memory are needed to take advantage of the enhancements of 32-bit protected mode—and 4 megabytes of free disk space. The

Turbo Animator does not use an EMM memory manager. Some memory managers are not compatible with the Turbo Animator. If you receive a message indicating there is not enough extended memory or there is an incompatible memory problem, remove your memory manager. Memory managers are programs such as QEMM from Quarterdeck, 386MAX from Qualitas, and EMM386 from Microsoft.

To install the Turbo Animator:

1. Insert the TEMPRA Turbo Animator diskette into a floppy drive and type `"a:install"` (or `"b:install"`) and follow the instructions on the screen. If TEMPRA PRO is already installed, be sure to install the TEMPRA Turbo Animator in the same directory.
2. When the installation is complete, the configuration menu appears for you to select the type of display board you're using. Select the appropriate board and bit-depth (8-, 16-, or 24-bit). After you select the type of display board, the standard TEMPRA PRO menu pops on the screen. Press the `"X"` (Exit button) at the top left of the menu to exit the standard mode program.
3. In DOS, type `"TPROLINK"` to run TEMPRA PRO in the turbo mode. Once TEMPRA PRO is open, press Select on the `"T"` button at the top of the menu. The menu disappears and the screen goes blank, then the TEMPRA PRO menu reappears running in turbo mode.

You can tell whether you're in standard or turbo mode by checking the Information Box at the upper right corner of the menu. The box will read `"PRO"` for standard mode and `"TURBO"` for turbo mode. Also when in turbo mode, the Output Functions menu button is replaced with the Animation Editor menu button, and if you select the Input Functions menu, your only choice is Video. You cannot perform scanning or printing functions in turbo mode. You'll need to exit turbo mode and return to standard mode to scan or print. Also, video capture functions are limited in turbo mode to the Cardinal SNAPplus and Video Blaster cards.

**NOTE:** The Animation Editor menus are available when the Turbo Animator is set at 8-bit per pixel of color (256 colors) or 16-bit per pixel of color (32,000 colors). You can't edit animations when you are using 16-bit (64,000 colors) or 24-bit (true-color, 16 million colors). To change to the 8-bit or 16-bit mode, start TEMPRA Turbo Animator by typing "TPROLINK -R" and reconfigure the program for the desired operation. The program automatically launches after each reconfiguration.

You can run TEMPRA PRO in the turbo mode one of several ways:

- **Type "TPROLINK."** This brings you into standard TEMPRA PRO. You then access turbo mode by pressing the "T" button in the upper left corner of the menu. When you exit from turbo mode, you are returned to standard mode TEMPRA PRO.
- **Type "HCTURBO."** This bypasses TEMPRA PRO in the standard mode and directly runs TEMPRA PRO in the turbo mode. If you don't plan to do any scanning or printing, you'll probably want to run TEMPRA PRO with this command. If you know you'll be using the input and output functions, you'll probably want to run TEMPRA PRO using the "TPROLINK" command.
- **From TEMPRA SHOW or TEMPRA Media Author.** If you have the TEMPRA SHOW or TEMPRA Media Author presentation package, you can run TEMPRA PRO in the turbo mode by selecting the TEMPRA button on the TEMPRA SHOW menu. To do this, make sure you change the SET command in your AUTOEXEC.BAT file to read SET VVPAIN=TPROLINK. This is an environment variable that is set when either of those two programs is installed. The default is SET VVPAIN=TEMPRA.

## TURBO CHARGER

---

When using TEMPRA PRO in the turbo mode, the menus and instructions are the same as in standard TEMPRA PRO mode except for scanning and printing capabilities. Because there's no appreciable speed increase in protected mode while using the Input and Output functions, these options are not necessary in turbo mode.

Exit from TEMPRA PRO turbo mode by selecting the "X" in the upper left corner of the menu. This is the same way you exit standard TEMPRA PRO.

## ANIMATION EDITOR

---

The Animation Editor allows you to create and edit animation files. The Animation Editor can load .FLI, .FLC, or .FLX files but only saves .FLC files when running in 8-bit, 256-color mode or .FLX files when running in 16-bit, 32,000-color mode.

In 16-bit mode, any animation files you create or edit are saved as 16-bit .FLX files. You can retrieve 8-bit .FLI or .FLC animation files and save them as 16-bit .FLX files without altering the original file. The first time you play an .FLI or .FLC file while in 16-bit mode, the animation plays very slowly. Subsequent plays appear at normal speed.

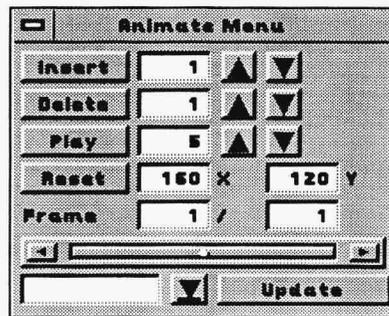
In 8-bit mode, any animation files you create or edit are saved as 8-bit .FLC files. You can retrieve 8-bit .FLI or .FLC files and 16-bit .FLX files. **If you load a 16-bit .FLX file while running in 8-bit mode, the file is converted to 8-bit using error diffusion dithering to match the animation to an RGB palette. You can then save that file as an 8-bit .FLC animation file without altering the original .FLX file.**

Because the Animation Editor is resident in TEMPRA PRO, you can use all the regular painting tools to create and edit animations. You can also apply those tools automatically to a selected range of frames, paint on each frame and have the changes applied automatically to an animation, or use a video camera or videotape to create animations.

The Animation Editor menu has seven selections: **Animate, Auto Apply, Auto Draw, Movie Maker, VCR, Ping Pong, and Fly Around.** When you first open the ANI drop-down menu, the only active selection is the Animate menu. Before you can use any of the other functions you must select **Reset** from the Animate menu or load an animation.

## Animate Menu

The Animate menu is the primary menu for editing, loading, saving, and erasing animation files. The Animate menu also allows you to reset the animation screen size, insert and delete frames, update the current frame, and move animations to and from the disk.



### *Insert Frames*

The Insert Frames button inserts a specified number of frames after the current frame. You can insert from 1 to 99 frames at one time, but you can insert an unlimited number of frames in one animation. The inserted frames will be identical to the frame that is current when you perform the Insert Frame function.

To insert frames, set the Frame Counter to the frame you want to insert more frames after. Type the number of frames you want to insert into the number box (or use the arrows to increase/decrease the number of frames). Then press the Insert button.

All inserted frames take on the characteristics of the frame just before it. So, if Frame 1 has an image on it, and you insert five frames, all six frames will have the same image. If the first frame is blank, then all subsequent frames will be blank.

### *Delete Frames*

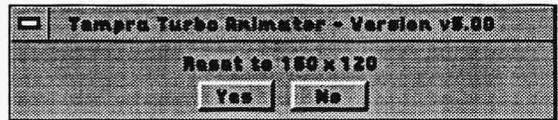
The Delete Frames button deletes a specified number of frames (from 1 to 99 frames) beginning at the current frame. To delete frames, position the Frame Counter on the frame to delete. Type the number of frames you want to delete into the number box (or use the arrows to increase/decrease the number of frames). Press Delete. A dialog box appears to confirm the deletion. The deleted frames include the current frame plus the frames that follow, up to the total frames designated in the number box. So, if you're on frame 5 of an animation and you delete five frames, you'll be deleting frames 5, 6, 7, 8, and 9.

**Play**

The Play button plays the animation. The speed used to play the animation is set in the number box next to the Play button. The speed ranges from 0 to 200 and indicates the amount of delay between frames. The higher the number, the longer the delay and the slower the animation plays. To change the delay between animation frames, simply press Select inside the number box and enter the new number (or use the arrows to increase/decrease the number).

**Reset**

The Reset button sets the frame size for your animation. You can set the frame any size up to



the largest screen resolution your display board supports. Display boards support screen resolutions ranging from 320 x 200 to 1024 x 768. You can change the frame size by entering the desired resolution in the X and Y boxes next to the Reset button.

To change the frame size, press Select in the X and/or Y boxes, enter the desired values, and press the Reset button. Be sure to reset the frame *before* creating an animation if you want it to be a different size.

**NOTE: Whenever you reset your frame size from the Animate menu, any frames of animation that are currently in memory are lost, and the frame counter resets to frame 1 of 1. Whatever is on your screen when you select Reset becomes part of frame 1 of the animation.**

**Frame**

The Frame number boxes indicate the current frame and the total number of frames in the animation. You can change to another frame by placing the cursor in the number box and pressing Select. When the box changes color, type in a new frame number. The slider bar moves to a new location and the new frame appears on the screen.

Another way to move from frame to frame is the slider bar. The slider bar shows the location of the current frame in the total animation. You

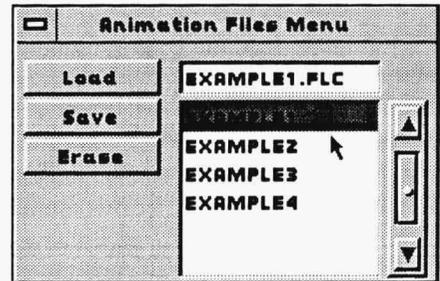
can move the frames back and forth by placing the cursor in the slider bar. The arrows at each end of the slider bar move the animation forward and backward one frame at a time.

### **Update**

The Update button records the current image on the screen as the current frame. *To save the current frame, you must press the Update button before going to the next frame. If you move before using the Update button, all changes made to the frame are lost.* The Update button does not save animations; it saves the individual frame. You must save the entire animation using the Animation Files menu before exiting TEMPRA Turbo Animator.

### **Animation Files Menu**

The bottom left of the Animate menu contains a filename box with an arrow next to it to open the popup menu that displays the list of available animation files. This is the Animation Files menu and is used to save, load, and erase animation files. All animations



saved by the Animation Editor have the .FLC extension if you're running in 8-bit mode and the .FLX extension if you're running in 16-bit mode, although you can load or erase files with .FLI, .FLC, or .FLX extensions. Files are displayed in alphabetical order and there is a scroll button for viewing files not visible on the initial screen.

### **Load**

The Load button on the Animation Files menu loads a selected file into the Animation Editor. The file must be highlighted in the list of files before it can be loaded. Highlight a file by moving the cursor over the name of the file and pressing Select. The selected file appears in the filename box. Select the Load button to bring the animation onto the screen. You must designate the directory containing your animation files in the Set Disk Directories menu under "Image" (in the Disk menu on the Main Menu Bar). The Animation Editor looks in the

Image path for animation files to be loaded or saved. When you load an animation, frame size is reset to the size of the frames in the animation.

### Save

The Save button saves the current animation to disk as an .FLC or .FLX file. Animations must be saved to a disk file before you exit TEMPRA Turbo Animator. Updating a frame does not save the animation to disk. To give an animation a new name, select the filename box above the list of files. The box changes color prompting you to type in the new name. Save the animation with the new name.

You can overwrite an existing animation file by selecting the file from the list. The existing filename appears in the filename box. When overwriting an animation file, the Animation Editor prompts you to confirm that you want to overwrite the existing file.

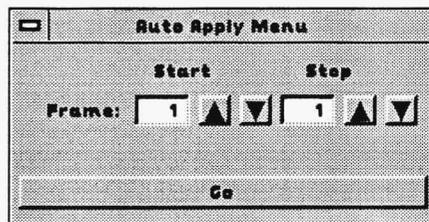
### Erase

You can also erase a file from the Animation Files menu. The Erase button erases the highlighted animation file. When erasing an animation file, the Animation Editor prompts you to confirm that you want to erase the existing file.

*Animations are different from images. If you use TPROLINK to run TEMPRA PRO in the turbo mode, the image is still on the screen when you leave turbo mode and return to standard mode. So you can still save the image to disk before exiting TEMPRA PRO. However, if you don't save the animation file before you exit turbo and return to standard mode, all changes made to the animation are lost.*

### Auto Apply Menu

The Auto Apply menu allows you to select a range of frames and automatically apply a filter, pattern, or a color to the entire range of frames in an animation. The range can be from 1 frame up to all



frames in the animation. As the special effect you designate is applied to each frame, you see the change being made. When using Auto Apply, you do not need to update each individual frame. Update is done automatically as the effect is applied to each frame. To stop Auto Apply, press and hold the right mouse button.

To use Auto Apply, first load or create your animation in TEMPRA Turbo Animator. Then set up the filter, pattern, or color you want to use on the animation. Remember that Auto Apply can only apply effects that fill the whole frame. You can't use effects such as the Geometry tools, Airbrush, Edit, or Transformation. You could use Auto Apply to fill a background or pattern to an image.

### ***Start and Stop***

The Start and Stop number boxes allow you to control the starting and stopping frames to apply the special effects. Press Select inside the number box to set the frame number you want to begin to apply the effect to, and the last frame you want the effect applied to. You can also use the up and down arrows next to the number boxes.

### ***Go***

The Go button starts the automatic application. Each frame appears as it is changed.

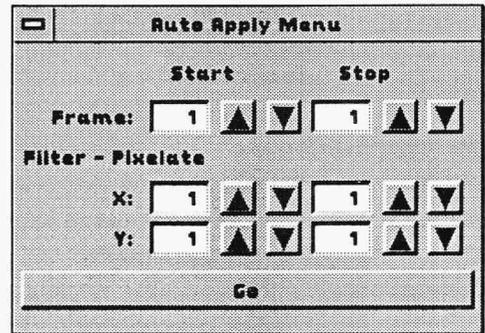
As an example of how to use Auto Apply, suppose you've created a dog that runs across the screen as your animation file and you want to put the running dog in front of a forest scene. To use Auto Apply to accomplish this, you would do the following.

1. Create the forest scene as a separate image file and load it in the Pattern menu.
2. Load the dog animation onto the screen. Make sure the dog is animated on a single-color background (such as black).
3. Select the Swap tool and pick the black as the color to be swapped.

4. Select Auto Apply from the drop-down menu. In the Auto Apply menu, set the start and stop frames to be filled with the forest scene. Press Go when you've designated the frames.
5. Each frame in the dog animation swaps the black area for the pattern (the forest scene).
6. When TEMPRA PRO is finished with all the designated frames, go back into the Animate menu and select Play. You should now see the dog running through the forest.

That's just one way of using Auto Apply to fill animations with special effects. It alleviates the tiresome work of redrawing backgrounds or creating filters and lets you concentrate on detailed animations. You can also use the Mask functions to protect parts of the animation from being changed.

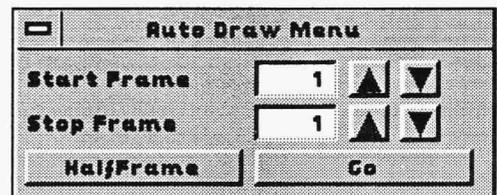
Some of TEMPRA PRO's filters have settings or adjustments. When one of these filters is active and you select Auto Apply, you see the settings and adjustments as part of the Auto Apply menu. You are able to change these settings directly from the Auto Apply menu.



You still need to go back to the Animate menu and save the updated animation in the Animation Files menu. The Auto Apply function automatically updates each frame but does not save the animation file.

### Auto Draw Menu

The Auto Draw menu can be used whenever you want to update several frames of an animation using the same drawing tool. With Auto



Draw, you paint on the frame using the currently selected drawing tools. When you finish painting a frame, press the **Cancel** button on your mouse. TEMPRA Turbo Animator updates that frame and moves to the next frame. To stop Auto Draw, press and hold the right mouse button.

### ***Start and Stop***

The Start Frame and Stop Frame number boxes let you designate the frame on which to begin and end painting.

### ***Half Frame***

The Half Frame button displays the differences between the preceding frame and the current frame. The Half Frame display highlights the differences by showing every other line of the areas that are different.

### ***Go***

The Go button starts the automatic application process.

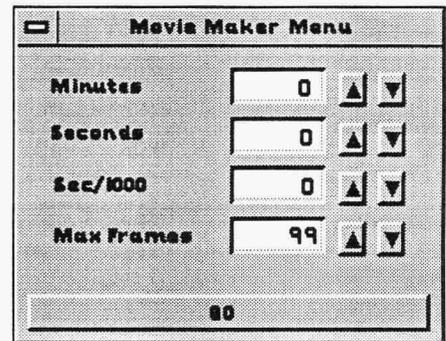
To use Auto Draw, load your animation and set up the painting tools you want to use. Select the Auto Draw menu and designate the Start and Stop frames. If you want to use the Half Frame effect, select it before you select the Go button. Select Go and the menu disappears.

Now do your painting as usual. When you're finished painting that frame, press the Cancel button and the next frame appears. If you have the Half Frame function active, you'll see the next frame with alternating lines from the previous frame. Press the left mouse button to make the lines disappear and start painting on the next frame. When you're finished, the Auto Draw menu pops back up onto the screen.

You still need to go back to the Animate menu and save the updated animation in the Animation Files menu. The Auto Draw function automatically updates each frame, but it doesn't save the animation file.

## Movie Maker

The Movie Maker menu allows a computer equipped with a Cardinal SNAPplus or Video Blaster video card to create an animation using a video camera. The frames in the animation are produced by a set of video image captures. This allows you to create "time-lapse photography."



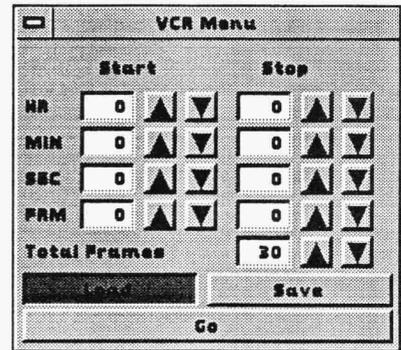
Before using the Movie Maker menu, select Video from the Input menu and choose SNAPplus or Video Blaster from the drop-down list. The Snap Full option is not available with TEMPRA Turbo Animator. Remember to set the palette before using Movie Maker when in 8-bit mode.

The Movie Maker Menu allows you to set the elapsed time between frame captures. The Minutes, Seconds, and SEC/1000 number boxes set the time gap between each image capture. The time needed to capture an individual frame is determined by the speed of your computer and the size of the image. It may take up to several seconds to capture and save a 640 x 480 frame. Small frames can be captured in a fraction of a second. The Sec/1000 number box may not have any effect unless you're capturing very small frames on a fast computer. If you have more than 4MB of RAM, you may want to use a RAMDRIVE to speed up capturing. Refer to the end of this chapter for hints on how to use a RAMDRIVE with TEMPRA Turbo Animator.

If all the time controls are set to 0, the Movie Maker captures frames as fast as the computer allows. The Max Frames number box allows you to determine the number of frames to be created by Movie Maker. The maximum number you can create is 999. The Go button starts TEMPRA Turbo Animator capturing frames. To stop capturing frames, press and hold the right mouse button. *Remember that you still need to save your animation to disk using the Animation Files menu.*

## VCR Menu

The VCR function allows you to create animation files from a videotape, or play animation files from your hard disk and record them to videotape. Your computer must have a VISCA compatible VCR attached and have a SNAPplus or Video Blaster card installed in order to use this feature.



Before using the VCR menu, be sure that:

1. Tapes are time coded.
2. Tapes are not wound to the very beginning or the very end.
3. If you are using a serial port other than the default port com2, your AUTOEXEC.BAT file must be modified to include the statement `SET VISCA_PORT=n` (where `n` is the number of the com port to which the VCR is connected).

## Load

Use **Load** to capture frames from a VCR to be stored as an animation file. To load video from a VCR, follow the steps below.

1. Set the location on the tape where you want to **Start** grabbing frames.
2. Set the location on the tape where you want to **Stop** grabbing frames.

*Remember that frame accuracy with Sony VISCA compatible VCRs such as the Vdeck is  $\pm 2$  frames, so you may want to set the starting point a few frames before the one you actually want to be the first frame and the stopping point a few frames after the one you want to be the last frame, then later you can delete the unwanted frames.*

3. Set the number of Total Frames you want to grab. "Real-time" video is 30 frames per second, so be sure that the number of frames corresponds with the time designated — i.e., 1 second = 30 frames, 2 seconds = 60 frames.

**NOTE: Animation files take up a lot of disk space. For example, a 1-second, 30-frame, 256 x 100 pixel animation file requires about 3MB of disk space.**

4. Select **Go**.

The first frame that is loaded from the VCR overwrites the frame that is currently active in the animation. Therefore, if you want the current frame to be part of the finished animation, you may want to insert a blank frame before you start to load frames from the VCR.

### **Save**

Use **Save** to record frames from an animation file onto a videotape. If **Save** is active, the **Stop** portion of the VCR menu is disabled. Be sure the output of the SNAPplus or Video Blaster is connected to the video input of the VCR (if you are using a Video Blaster, you must have an NTSC converter to use the **Save** feature).

Before using **Save** to record frames from an animation file onto a videotape, **your screen size must be set to 640 x 480**, regardless of the frame size of your animation. If your animation is 320 x 200 and your screen size is 640 x 480, the animation will be saved to tape with the animation in the middle of the screen. To save an animation to videotape, follow the steps below.

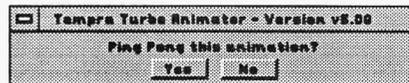
1. Set the location on the tape where you want to **Start** recording.
2. Set the number of **Total Frames** you want to record.
3. Select **Go**.

If the total number of frames set to record is greater than the number of frames in the animation, TEMPRA Turbo Animator returns to the beginning of the animation and continues playing frames from there.

Animations are recorded to videotape at the same speed at which the animation is played.

### Ping Pong

The Ping Pong feature of TEMPRA Turbo Animator takes an existing animation and reverses it, adding to the existing animation. If you have a 5-frame animation and choose Ping Pong, frame 4 is duplicated as frame 6, frame 3 is duplicated as frame 7, etc. The number of frames of the new animation is twice the number of original frames minus one. In other words, if you start with a 5-frame animation and choose Ping Pong, the animation will then have 9 frames.

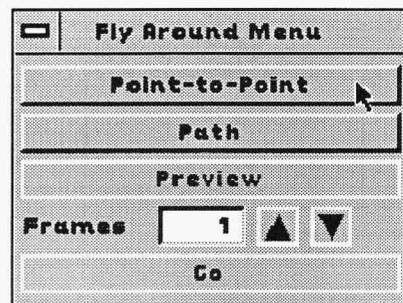


Suppose you have a 5-frame animation that counts from 1 to 5 with each frame of the animation displaying a different number (1-2-3-4-5). After you Ping Pong the animation, it counts from 1 to 5 and then back down to 1 (1-2-3-4-5-4-3-2-1).

To Ping Pong an animation, select Ping Pong from the ANI drop-down menu. When you see the message "Ping Pong this Animation?" select Yes.

### Fly Around Menu

The Fly Around menu allows you to create the illusion of motion video from a still image. This is done by grabbing small frames from a large image and playing them as an animation. Fly Around only works when you have an image or canvas size that is larger than the animation you want to create.



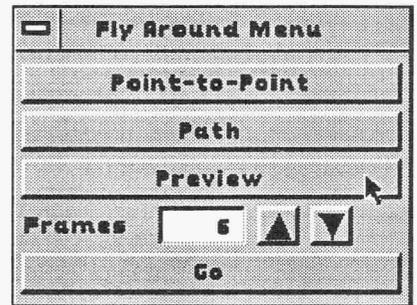
There are two methods for using Fly Around: Point-to-Point and Path. Point-to-Point lets you determine exactly where each frame of animation

will be taken from the image. Path lets you select a beginning and ending point and the number of frames of animation to grab.

**NOTE: When using Fly Around, the current frame is overwritten. So, if you want the current frame to be a part of the final animation, insert a frame before you start to use Fly Around.**

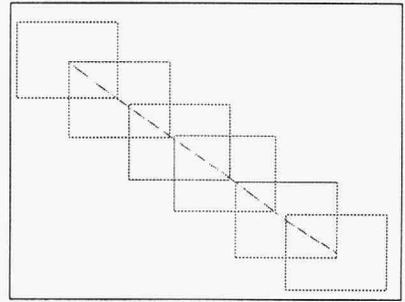
To use the Point-to-Point method of Fly Around to create an animation, follow the steps below.

1. Load an image from the disk.
2. Select Animate from the ANI drop-down menu and then set the size of your animation to be smaller than your image.
3. Select Fly Around and then select Point-to-Point.
4. The Fly Around menu disappears and you see a small ghost box the size of the animation you are creating. Move this box to the first place on the image where you want to "grab" a frame of animation and press Select.
5. Now move the little box to the next location on the image where you want to "grab" a frame of animation and press Select. Continue doing this until you have placed all the frames you want.
6. Press Cancel and the Fly Around menu returns. Notice that the number of frames now matches the number of boxes you placed on the image.
7. Select Preview to see a representation of where the frames of animation will be taken from



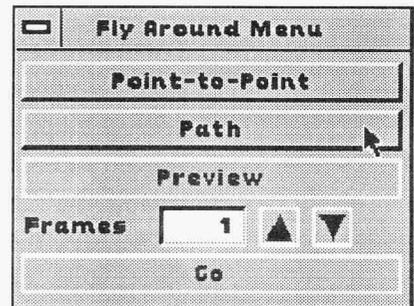
on the image. You will see a series of ghost boxes at each location you selected.

8. Press **Cancel** to return to the **Fly Around** menu. Press **Go** and **TEMPRA Turbo Animator** begins “grabbing” a frame of animation from each place you selected on the image. As each frame is updated, the **TEMPRA PRO** clock appears on the screen letting you know that work is in progress. When **Fly Around** is complete, the **Fly Around** menu returns to the screen. Press **Cancel** and select **Animate** from the **ANI** drop-down menu to play and/or save the animation.



To use the **Path** method to create an animation, follow the steps below.

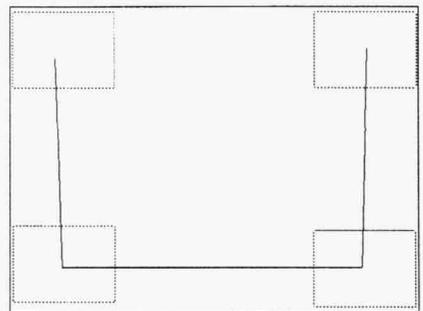
1. Load an image from the disk.
2. Select **Animate** from the **ANI** drop-down menu, and then set the size of your animation to be smaller than your image.
3. Select **Fly Around** and then select **Path**.
4. The **Fly Around** menu disappears and you see a small box the size of the animation you are creating. Move this box to the first place on the image where you want to “grab” a frame of animation and press **Select**.
5. Now move the little box to the last place on the image where you want to “grab” a frame of animation and press **Select**.



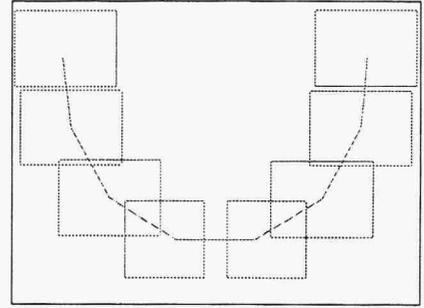
6. Press Cancel to return to the Fly Around menu. Notice that the number of frames now matches the number of boxes you selected from the image. Press Select inside the number box and enter the number of frames you want for your animation.
7. Select Preview to see a representation of where the frames of animation will be taken from on the image. Notice that TEMPRA Turbo Animator places frames between the first and last frames you selected on the screen. The location of these frames is determined by where on the image you selected the first and last frame, and by the number of frames you choose to include.
8. Press Cancel to return to the Fly Around menu. Press Go and TEMPRA Turbo Animator begins “grabbing” the frames of animation. As each frame is updated, the TEMPRA PRO clock appears on the screen letting you know that work is in progress. When Fly Around is complete, the Fly Around menu returns to the screen. Press Cancel and select Animate from the ANI drop-down menu to play and/or save the animation.

There is one thing to be aware of when using the Path method to create animations. The final location of the frames of animation may not be exactly where you expect them to be.

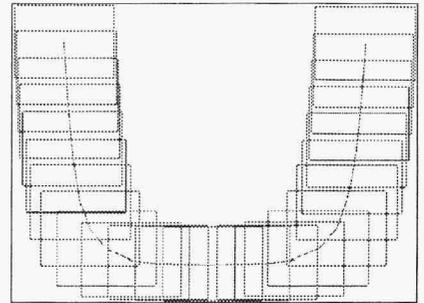
For example, if you place four boxes in the corners of the screen starting with the upper left corner proceeding counterclockwise (see the figure at the right) and then select 8 frames from the Fly Around menu, the results include the first and last locations exactly where you placed them, in the upper left and upper right corner of the screen. But you don't get frames from the bottom left and bottom right of the screen. This is because TEMPRA Turbo Animator places the inserted frames in an equidistant relationship to the frames you placed on the screen.



Your results include a frame in the upper left and upper right corner of the screen. TEMPRA Turbo Animator then tries to follow a path along the line of the four frames you placed on the screen (like the figure above). But since all eight frames have equal distance between them (measuring from the center of one frame to the center of the next), your final results are similar to the figure at the right.



The more frames you select to be included in your animation, the closer the inserted frames are to being where you expect them to be. If you place four frames on the screen as described above and then select 25 frames from the Fly Around menu, your results are similar to the figure at the right.



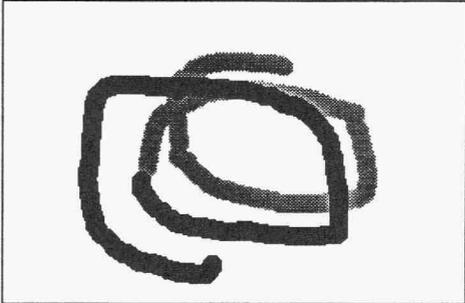
If you want a large number of frames to be positioned at precise locations on the screen, then your best method is the Point-to-Point method. Using Point-to-Point, TEMPRA Turbo Animator grabs frames from the exact location(s) you select.

## EXAMPLE ANIMATION FILES

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Your Turbo Animator disk contains a set of files created using the TEMPRA Animation Editor. These files are EXAMPLE1.FLC through EXAMPLE4.FLC. These animations are provided to show how the tools in the Animation Editor work. Each animation contains 10 frames. The animation files were created using a screen resolution of 320 x 200 on a generic VGA display card and the TEMPRA PRO painting and editing tools.

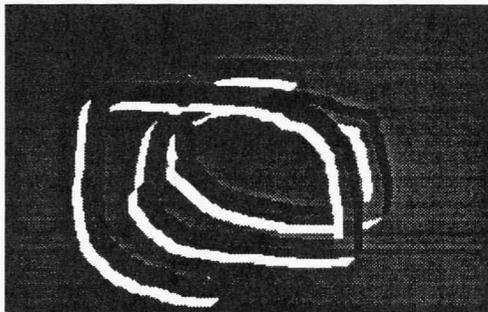
### Creating EXAMPLE1.FLC

1. Move to the Clear button on the top of the Main Menu Bar and press Select (left mouse button). Press Select on top of the Yes button in the dialog box to confirm clearing the screen. (The Clear color we used was white).
- 
2. Select the ANI drop-down menu.
  3. Select the Animate menu.
  4. On the Reset button, press Select. Press the Yes button in the dialog box to confirm resetting the screen. This resets the animation to the first frame, which is blank.
  5. Press Cancel (the right mouse button) to paint on the canvas.
  6. Use Freehand and a large brush to paint on the canvas.
  7. Press Cancel to return to the Main Menu and select the Animate menu from the ANI drop-down menu.
  8. Press Update to record the changes in the first frame.
  9. Press Insert. This inserts one frame after the first frame you just created and advances to the second frame.
  10. Press Cancel to return to the screen and paint more of the moving line.
  11. Press Cancel to return to the menu and select the Animate menu.
  12. Press the Update button to record Frame 2.
  13. Press Insert to insert one frame after Frame 2. You advance to Frame 3. Continue adding to the line and updating the frames until all 10 frames in the animation are complete. The color was changed in Frame 6 to add some variety.

When the last frame is completed, press the arrow at the bottom left of the Animate menu to open the Animation Files menu. In this menu, give the animation a name and save it (ours was saved with the name EXAMPLE1.FLC).

### Creating EXAMPLE2.FLC

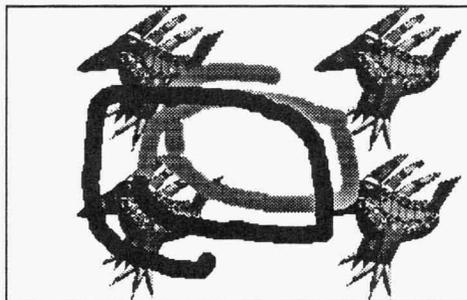
1. In the FTR drop-down menu select Emboss to turn it on.
2. In the Animate menu, press the arrow at the bottom left of the menu to open the Animation Files menu. In this menu, load the animation named EXAMPLE1.FLC.
3. Move to the Auto Apply button and press Select. The Apply menu appears.
4. Set the starting frame to 1 and the ending frame to 10.
5. Press Go.



The Emboss filter is applied to frames 1 through 10. You see the Emboss filter being applied to the frames. After the selected frames have been embossed, the menu returns. Save this animation as EXAMPLE2.FLC.

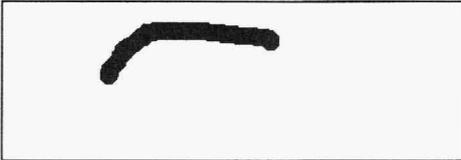
### Creating EXAMPLE3.FLC

1. Use the Animation Files menu to load the animation we named EXAMPLE1.FLC
2. Go to the FTR button and turn off the Emboss filter.
3. Move to the Pattern menu and select a pattern from



- disk. (In EXAMPLE3.FLC, we used an image of BUZZ.)
4. Move to the EDT drop-down menu and select Color Protect.
  5. Select the Swap button. The menus disappear and a Pick icon appears. Move the Pick icon to the white background of the image and press Select. This permits painting on the white color only.
  7. Move to the ANI drop-down menu and select the Auto Apply menu. Set the starting frame to 1 and the ending frame to 10.
  8. Press Go. The pattern is automatically painted onto the frames in place of the white color. This allows you to paint a background into an existing animation. When the last frame is completed, save the animation to a file. The animation must be saved to a file or it will be lost when you exit TEMPRA Turbo Animator.

### Creating EXAMPLE4.FLC

1. In the Animate menu, select the Reset button. A confirmation box appears, press the Yes button to reset the animation.
- 
2. Move to the Insert number box and press Select. Change the number in the box to 9. Press Insert to add 9 frames to the animation.
  3. Select Freehand and the same large brush used to create the EXAMPLE1.FLC file.
  4. Select Auto Draw from the ANI drop-down menu and adjust the number boxes to start on Frame 1 and end on Frame 10. Be certain the Half Frame button is turned on.
  5. Press Go to start painting onto Frame 1.
  6. Paint a short line using the Freehand tool.

7. Press Cancel to record the change and move to the next frame. (Pressing Cancel moves you to the next frame when you use the Auto Draw function.) Continue adding short pieces of the free-hand painted line until the last frame is painted and the menus return. You will see a different result than in EXAMPLE1.FLC. In EXAMPLE1.FLC each new frame added paint and the results were the combination of all the previous frames. In EXAMPLE4.FLC each application of paint disappears in the following frame.

## HINTS AND COMBINATIONS

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### Using RAMDRIVE With Movie Maker

If you have more than 4MB of RAM, you can use a RAMDRIVE to speed up frame grabbing with Movie Maker. A RAMDRIVE is a virtual drive that is made from RAM when your computer boots. To set up a 4MB RAMDRIVE, add the statement below to your CONFIG.SYS file.

```
DEVICE=C:\DOS\RAMDRIVE.SYS 4096 /E
```

You should have the TEMPRA directory in your DOS path. Before running TEMPRA Turbo Animator, copy TEMPRA.OVL to your RAMDRIVE. Change from your hard drive to your RAMDRIVE and run TEMPRA Turbo Animator from there. Your Movie Maker will capture about 3 times faster when using a RAMDRIVE.

### Using Auto Apply to Fade to Black

You can use the Auto Apply tool to fade out of or into an animation or as a transition from one animation or graphic to another.

To fade out of an animation, follow the steps below.

1. Go to the last frame of your animation and insert 10 or more frames (the more frames you insert, the more subtle the fade will be).
2. Got to the INK menu and set your color to black.
3. Go to the FTR menu and select the Wash filter.

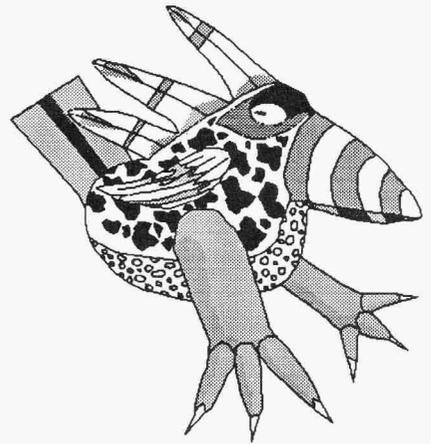
4. From the ANI menu, select Auto Apply.
5. Set the Start Wash Strength at 10. Set the Stop Wash Strength at 100.
6. Set the Start frame to the first frame you just inserted in step 1. Set the Stop frame to the last frame of the animation.
7. Press Go.

A wash of black gradually appears after the animation until the last frame is completely black. Return to the Animate menu and play the animation. You'll see the animation play and then fade to black.

**NOTE: For a more subtle fade, insert more frames in the animation to fade from. More frames distribute the washing effect more evenly.**

# ***Glossary***

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# Glossary

- AntiAlias** The process of smoothing the edges of angled items on a display by averaging the colors of the edge of an item with the background colors.
- Aspect ration** The ratio of pixels across an image divided by the number of pixels from the top to the bottom. A common aspect ratio is 1.5 to 1, which is used in 35mm slides. Aspect ratio is related to resolution.
- Bit** Binary digit. A bit is the basic unit of measurement in computers. TEMPRA PRO uses the number of bits per pixel to determine the number of colors available in an image. For instance, 8 bits per pixel gives 256 colors, 16 bits per pixel provides 32,000 colors, and 24 bits per pixel gives 16,000,000 colors.
- Bitmap** An image composed of individual pixels.
- Bitmapped font** A font made up of dots or pixels. Bitmapped fonts are different from outline fonts.
- Black and white** Image created with black, white, or gray colors. TEMPRA PRO uses gray-scale black and white images.
- Brighten** A filter function that changes the brightness of an image by darkening or lightening specific areas of the image.

- BRS** The push-button on the Main Menu Bar that opens the Brush drop-down menu listing the Brush functions.
- Button** An active part of a menu. Moving the cursor to a button and pressing Select starts an action or adjusts a setting. Some buttons contain a number box or filename box in which a value or filename can be typed.
- Byte** A set of eight consecutive bits.
- Cancel** The action of pressing the right button on the mouse. You can press Cancel to perform several functions in TEMPRA PRO: to stop actions as they occur, to complete a set of tasks, or to move between the canvas and the menus.
- Chord** A line segment that joins two points on a curve.
- Clipping** A part of an image. Clippings can be saved on disk and loaded onto the screen alone or with other clippings or images. Clipping also refers to the editing procedure of cutting a portion of an image on the canvas and moving, copying, resizing, and rotating the portion. A clipping file can be a rectangle or polygon. Clipping files are similar to image files.
- CMY** The Cyan, Magenta, and Yellow color model, based on the mixture of three subtractive primary colors. Subtractive primary colors are complements of additive primary colors. Cyan is a complement of red and is produced by mixing green and blue. Magenta is a complement of green and is produced by mixing red and blue. Yellow is a complement of blue and is produced by mixing red and green. Mixing complementary colors produces white.
- Color cycle Animation** An effect in the TEMPRA PRO ColorSpread menu that allows you to create color spreads that pulse the selected range of colors through the image. Available on 8-bit boards only.

- Color compression** Used only on 8-bit displays for color management. In compression, TEMPRA PRO removes unused or similar colors from the palette and substitutes black for the removed colors. New colors can be created to replace the black.
- Color depth** The measurement of colors available on a display. Color depth is usually measured in bits per pixel. For instance, 8 bits per pixel gives 256 colors, 16 bits per pixel gives 32,000 colors, and 24 bits per pixel gives 16,000,000 colors.
- Color protection** An Edit function that allows you to select specific colors on the palette or canvas from being painted over.
- Color ramp** A set of colors that vary slightly from each other and are spread over an area of the canvas. In TEMPRA PRO a color ramp is called a spread. Also known as a gradient.
- Conventions** The way TEMPRA PRO presents menus, buttons, displays, and other items.
- Current** The item that is active. This manual refers to current color, current image, current pen, and current canvas.
- CVS** The push-button on the Main Menu Bar that opens the Canvas drop-down menu listing the Canvas functions.
- Default values** The settings and values assigned by TEMPRA PRO when it is first started. TEMPRA PRO “remembers” certain values and settings when you exit, and these values become the default settings in the next session of TEMPRA PRO.
- DSK** The push-down buttons on the Main Menu Bar that opens the Disk drop-down menu listing the Disk functions.
- Diameter** A straight line segment passing through the center of a circle (that connects two opposite points on the circle’s circumference).

- Display** The area used by TEMPRA PRO to show an image. Similar to screen.
- Distortion** The change in the physical shape of an image that occurs when you increase the height of the image more than the width or the width more than the height.
- Dither** The mixing of similar colors to create the appearance of more colors. Dithering smooths the changes between colors and is used on 256-color boards to simulate a display with more colors.
- Drop shadow** A tint or solid color placed behind text to give the appearance of a shadow. In TEMPRA PRO, the drop shadow may be solid or blend into the background colors.
- EDT** The push-button on the Main Menu Bar that opens the Edit drop-down menu listing the Edit functions.
- File** A set of related pieces of information stored on and retrieved from a computer disk under a single filename. In TEMPRA PRO, you can save files for images, clippings, masks, pens and palettes.
- File extension** The three-letter abbreviation that designates file formats supported by TEMPRA PRO. Graphic file formats for images and clippings include .TIF, .TGA, .GIF, .WIN, .-IM, .!IM, .BMP, .EPS, .PCX and .PCC. TEMPRA PRO also recognizes file extensions for pens (.PEN), masks (.MSK), palettes (.PAL), and fonts (.BSF).
- Filename** The name you give a file to be saved. In TEMPRA PRO, filenames must be 8 characters or less.
- Fill** A Pen function in which the current color, spread, or pattern disperses over the screen until it meets another color (Flood) or a “protected” color (Boundary).

<b>Filled</b>	An option in the Geometry functions that allows you to paint a closed figure containing a color, spread, or pattern. Opposite of Outlined.
<b>Font</b>	A complete set of characters of one style and size of type. In TEMPRA PRO, fonts are bitmapped graphics that can be typed onto an image.
<b>FTR</b>	The push-button on the Main Menu Bar that opens the Filter drop-down menu listing the Filter functions.
<b>Function key</b>	The keys at the top or on the side of the keyboard labeled F1 through F12. Function keys perform specific tasks in TEMPRA PRO.
<b>GEO</b>	The push-button on the Main Menu Bar that opens the Geometry drop-down menu listing the Geometry functions.
<b>Gradation</b>	An area that gradually changes from light to dark values or vice versa or from one color to another. In TEMPRA PRO, gradations are called color spreads.
<b>Gray scale</b>	A black-and-white image in which the pixels are shades of gray.
<b>HLS</b>	The Hue, Luminance, and Saturation color model, based on three qualities of color. Hue refers to the distinction between colors, luminance refers to the illumination of color; and saturation refers to the vividness or hue or the strength of the color.
<b>HSV</b>	The Hue, Saturation, and Value color model, based on three qualities of color. The HSV color model is useful for adjusting a color's tint, shade, and tone.
<b>High-color</b>	The designation for display boards that use 16 bits per pixel to display 32,000 colors. The precise number is 32,768.

<b>Icon</b>	A symbol used to represent a word or group of words or a function or action.
<b>Image</b>	A painting or photograph or other digital image. Image files are stored on disk and can be displayed on screen. Image files fill a canvas or screen in TEMPRA PRO.
<b>INK</b>	The push-button on the Main Menu Bar that opens the Input drop-down menu listing the Input functions.
<b>Jaggies</b>	The stair-stepping effect of bitmapped type or graphics, especially diagonal or curved lines, formed by square pixels. In TEMPRA PRO, lines with jaggies can be antialiased to diminish the stair-stepping effect.
<b>Justification</b>	The starting or alignment point for text. TEMPRA PRO aligns text on the left, the center, or on the right. Text flows from the justification point.
<b>Landscape</b>	A presentation of an image on the canvas where the side-to-side dimension is longer than the top-to-bottom dimension. A horizontal page orientation.
<b>Laser printing</b>	Technology that uses a laser beam to transfer data to paper.
<b>Mask</b>	An Edit function that allows you to select specific areas of your image that cannot be painted over.
<b>Menu</b>	A list of options in a graphic user interface. The controls in TEMPRA PRO are located on menus. Menus include the Main Menu Bar, drop-down menus, function menus, and pull-down menus.
<b>Negative</b>	Photographic film negative. Compare this to transparency, which is a positive image.

- Object-oriented Graphics** Graphic objects created as a series of mathematically-defined curves and lines treated as a single unit. An object-oriented graphic can be resized without causing distortion or moire patterns. Opposite of paint-type graphics.
- OUT** The push-button on the Main Menu Bar that opens that Output drop-down menu listing the Output functions.
- Outline font** A font made up of an outline of the shape of each character, which can be scaled to any size and printed on a laser printer or typesetter. Opposite of bitmapped font. (TEMPRA PRO uses bitmapped fonts.)
- Paint-type graphics** Graphic images represented by pixels, which can be individually manipulated on-screen. These graphics may become distorted or lose resolution when resized. Also known as bitmapped graphics. Opposite of object-oriented graphics.
- Palette** The range of 256 colors arranged in eight rows that can be found on the InkColor, ColorSpread, Palette Lock, Color Protect, and Color Compress menus and on the Pattern Editor. The first two columns of the palette are reserved TEMPRA PRO's menu colors.
- PEN** The push-button on the Main Menu Bar that opens that Pen drop-down menu listing the Pen functions.
- Perspective** A Transformation function that allows images (or portions of images) to be skewed, warped, and distorted.
- Pixel** Picture Element. The basic unit of color in a bitmapped image. The pixel is the smallest changeable part of an image on a display or canvas. The clarity of screen resolution varies depending on the number of pixels per inch on the monitor.

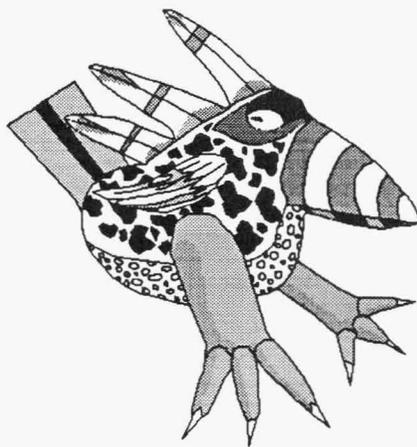
- Portrait** A presentation of an image on the canvas where the top-to-bottom dimension is longer than the side-to-side dimension. A vertical page orientation.
- Process color** Screened dots of the four process colors—yellow, magenta, cyan, and black, combined to achieve full-color printing.
- Radius** A line segment that joins the center of a circle at any point on its circumference.
- RAM** Random Access Memory. This is where programs and documents are stored while you're working with them. If you lose power before saving to disk, whatever is in RAM is lost.
- Resolution** The measurement of pixels on a display screen, in a print, or on a canvas. Resolution is expressed as the number of pixels across by the number of pixels down. A generic VGA has 320 pixels across by 200 pixels down or a resolution of 320 by 200.
- RGB** The Red, Green, and Blue color model, based on the mixture of the additive primary colors.
- ROM** Read Only Memory. Permanent memory in a computer used to store programs which determine the operation of the computer itself. You can read information from it, but you can't write information to it.
- Scaling** Increasing or decreasing the size of a graphic while retaining the original relationship between its height and width.
- Scanner** A hardware device that converts a photograph or other piece of art into digital form (a collection of dots) that can be stored as a bitmapped file on a disk.
- Screen** The image display area visible in TEMPRA PRO. Sometimes the screen and canvas have the same area; however, a canvas can be larger or smaller than the screen.

<b>Select</b>	The act of pressing the left mouse button to perform an action in TEMpra PRO. When the menus are on the screen, pressing Select changes settings and values on the menus or starts an action.
<b>Serif/sans serif</b>	Two different typestyles designated by the presence or absence of finishing strokes at the top and bottom of text. TEMpra PRO includes two serif fonts (Fixed Pitch and Dutch) and two sans serif fonts (Default and Swiss).
<b>Service bureau</b>	A company whose services include providing high-resolution output from an imagesetter or slide film recorder from your computer file.
<b>Solid</b>	One hundred percent color, which is different from effects such as tint, wash, blend, and airbrush, which are a percentage of the solid color.
<b>Surprint</b>	To print one image over a background image, such as type over a graphic or tint.
<b>SVGA</b>	A "Super VGA" display adapter. SVGA display boards are compatible with generic VGA boards and display 256 colors at a higher resolution than generic VGA.
<b>TGA files</b>	TARGA files.
<b>TIFF files</b>	Tagged Image File Format. A standard graphic format for electronically storing and transmitting bitmapped, gray-scale, and color images.
<b>Tint</b>	A Filter function that changes color on the screen without changing the overall texture.
<b>Toggle</b>	A button or function related to another button or function in such a way that the selection of one turns off the other. In Rectangle, the Center and Corner buttons toggle each other.

- Transparency** A slide or color positive film through which light must pass to be seen or reproduced. In TEMPRA PRO, transparency is also an effect that allows you to paint an image on a canvas with a particular color (usually black) invisible.
- TRN** The push-button on the Main Menu Bar that opens the Transformation drop-down menu listing the Transformation functions.
- True-color** The designation of displays that use 24 bits per pixels to display 16 million colors. The precise number is 16,777,216.
- TXT** The push-button on the Main Menu Bar that opens the Text drop-down menu listing the Text functions.
- Wash** A Filter function that blends the current color with the colors on the canvas.

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