

TealPaint User's Manual



Program Version 6.53
Last Updated: February 15, 2006

Table of Contents

Introduction.....	1
<i>Contents</i>	<i>2</i>
<i>Installing</i>	<i>2</i>
Chapter 1 – Overview.....	3
<i>File Screen.....</i>	<i>3</i>
<i>Actions.....</i>	<i>3</i>
<i>Image Screen.....</i>	<i>4</i>
Opening/Animating Images.....	4
Creating a New Image	5
Moving and Converting Images	6
Importing and Exporting JPEG and BMP Images	7
Special Functions.....	8
<i>Drawing Screen.....</i>	<i>8</i>
Chapter 2 – Drawing.....	9
<i>Tools</i>	<i>9</i>
<i>Brushes</i>	<i>11</i>
<i>Patterns and Ink</i>	<i>12</i>
<i>Zoom Control</i>	<i>14</i>
<i>Undo</i>	<i>14</i>
<i>Menus</i>	<i>15</i>
Image Menu.....	15
Edit Menu	16
Option Menu	18
Chapter 3 – Tutorial.....	20
Step 1 – Create and open a new database.....	20
Step 2 – Create and open a new image.....	20
Step 3 – Set the foreground color to color blue using the color menu.....	20
Step 4 – Select the curve draw tool	21
Step 5 – Draw a waterline using the curved line tool.....	21
Step 6 – Fill below the waterline using the paint bucket.....	21
Step 7 – Fill the sky with light blue	21
Step 8 – Set the foreground color to beige using the system color picker.....	22
Step 9 – Select and draw an island using the polygon/shape tool	22
Step 10 – Add a new layer	22
Step 11 – Draw a tree trunk using the polygon tool.....	22
Step 12 – Draw coconuts using the filled circle tool	23
Step 13 – Draw leaves using the polygon tool.....	23
Step 14 – Enclose the tree using the selector tool.....	23
Step 15 – Move the tree using the selector tool.....	23
Step 16 – Copy the tree to the clipboard.....	24
Step 17 – Add a new intermediate layer	24
Step 18 – Paste a smaller copy of the tree	24
Step 19 – Add a title using the text tool.....	24
Step 20 – Add a sun using the circle tool.....	25
Step 21 – Merge layers.....	25
Step 22 – Select the tree brown color using the eye dropper.....	25
Step 24 – Magnify details using the zoom control.....	26
Step 25 – Draw highlights using the curve draw tool.....	26
Step 26 – Add details and finishing touches	26
Chapter 4 – Tips and Tricks	27
<i>Using External Storage Cards</i>	<i>27</i>

<i>Using Layers</i>	27
<i>Drawing Large Text</i>	27
<i>Drawing Polygons and Shapes</i>	28
<i>Using Blur with transparent layers</i>	28
<i>Animation Speed</i>	28
Chapter 5 – TealPoint Image Manager	29
<i>Step 1 – Select a Database File</i>	29
<i>Step 2 – Preview images</i>	30
<i>Step 3 – Import or Export Images</i>	30
Importing an Image	30
Importing Multiple Images	31
Exporting Images	31
<i>Step 4 – Other Actions</i>	32
Printing an Image	32
Install Database	32
Appendix A – TealPoint File List	33
<i>File Lists</i>	33
<i>Navigation</i>	33
<i>Categories</i>	34
<i>Flash Memory</i>	34
Appendix B – TealPoint File Manager	35
<i>Moving/Copying Files</i>	35
Appendix C – TealPoint Button Manager	36
<i>Description</i>	36
<i>Changing Default Mappings</i>	36
<i>Creating New Mappings</i>	36
Appendix D – TealPoint Pen-Free Navigation	37
Appendix E – Compatibility Notes	38
<i>Image Formats</i>	38
<i>Macintosh</i>	38
<i>Use as an external editor</i>	38
Appendix F – Using PicUtil	39
<i>Interactive Mode</i>	39
<i>Batch Mode</i>	39
Appendix G – Products	41
Appendix H – Revision History	44
Appendix I – Contact Info	46
Appendix J – Registering	46
Appendix K – Legal Notice	47

Introduction

TealPaint is a powerful but easy-to-use paint, photo-editing, and animation program for PalmOS and compatible handhelds.

TealPaint provides a wide array of tools that you can use to easily create and edit images and animations, or use it with other TealPoint applications to illustrate documents and folios.

TealPaint's unmatched set of features include:

Image Formats

- High resolution support
- 1,2,4,8, or 16 bit images
- Unlimited image sizes
- Multiple image databases
- Direct card (SD,CF,MMC) support

Drawing Tools

- Freehand draw tool
- Spotty draw tool
- Smoothed draw tool
- Line draw tool
- Constrained line tool
- Freehand shape/polygon tool
- Box, filled box draw
- Rounded box, filled rounded box
- Circle, filled circle
- Oval draw tool
- Snap to grid
- Erase tool
- Paint bucket
- Text tool with selectable fonts, color
- Selector tool (rectangular lasso)

Effects

- 24 Draw brushes
- 16 Draw patterns
- Multiple image layers
- 5 magnification levels
- Multiple undo levels
- Horizontal and vertical flipping
- Image scaling
- Image rotation
- Image blur

Extras

- Image Templates
- Image Cut/Copy/Paste
- Screen-grabbing import function
- Printing via TealPrint
- Animation capabilities
- Slideshow mode
- Direct BMP and JPEG import and export
- TealPaint Image Manager, a Windows import, export, and print utility

Contents

This archive contains the following files:

Program files:

TEALPNT.PRC	The TealPaint program file
IMAGEGR.EXE	Image Database import/export/print utility (Windows)
PICUTIL.EXE	Image Database import/export utility (DOS)
TPSETUP.EXE	TealPoint One-step installer (Windows)

Document files:

PNTDOC.PDF	This document in Adobe Acrobat (PDF) format
PNTDOC.HTM	This document in HTML format (sans images)
PNTDOC.PRC	This document in TealDoc format
REGISTER.HTM	TealPoint Registration form in HTML format
REGISTER.TXT	TealPoint Registration form in text format

Installing

On a Windows PC, you can also double-click on the installation program **TPSETUP.EXE** and follow the on screen prompts.



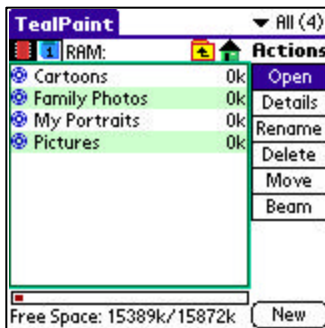
For other desktops, you can also use the Palm Install Tool icon (or “Quick Install”) in the Palm Desktop application to install the program file **TEALPNT.PRC**. It will appear on the Palm Computing device after the next HotSync. This manual is also provided in this archive as the Palm document **PNTDOC.PRC**, which can be viewed with our other application TealDoc.

Instructions on how to use the Palm Install Tool can be found in the handbook or Palm Desktop user guide that came with your handheld device

Chapter 1 – Overview

TealPaint's intuitive interface should feel familiar for anyone experienced in using a traditional PC-based drawing package. It consists of three main interface screens: the file screen, the image screen, and the drawing screen.

File Screen



The TealPaint **File Screen** appears when you first run the application. Listing all currently installed TealPaint-format image databases and JPEG files in the current category and storage location, it consists of a standard TealPoint File List and a column of action pushbuttons to the right. Tap on an file name to open, modify, or delete that file.

Please see Appendix A for more information on using a standard TealPoint File List.

Actions

The Action Buttons define what happens when a file in the image list is selected. Supported actions include:

Opens

Opens the selected image database for viewing or editing. If the selected file is a JPEG file, you may preview the file or import it into an image database.

Details

Brings up information about the selected database and allows changing of its category and backup state.

Rename

Renames the selected file

Delete

Deletes the selected file

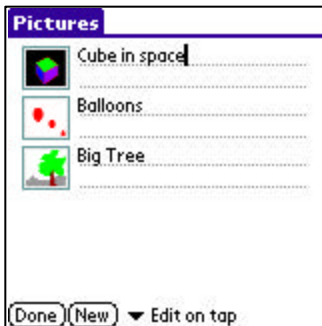
Move

Moves or copies the selected file to a new location

Beam

Beams the selected file to another handheld

Image Screen



The TealPaint **Image Screen** lists the images (if any) stored in the current image database. From the image screen you can open, delete, or create a new image in the current database. You may also use menu selections to import JPEG or BMP images into the database or export selected image out into those formats.

The images are listed vertically on the screen, with a thumbnail representation on the left and the image description on the right.

If no thumbnails appear, the database is empty. **TAP 'New'** to create a new image in the database (see following section).

TAP on a thumbnail image to OPEN that image for editing, animating, or viewing. Tap on the description, on the other hand, to select the image and activate a text cursor for editing the description. A pick list at the bottom of the screen selects which action occurs when you tap on a thumbnail.

Opening/Animating Images

When a thumbnail image is tapped, one of the following actions can occur.

Edit on tap

Opens the tapped image for editing in the drawing screen

View Only

Opens the tapped image in the viewing screen

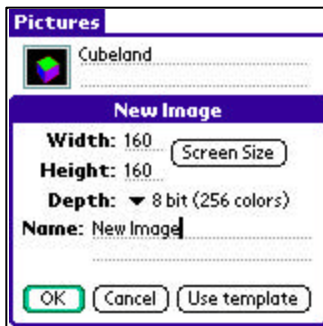
Animate

Cycles through all the images in the database, starting with the tapped image. The program will attempt to display the images according to the speed specified in the application animation settings. The maximum possible speed depends on the image resolution, bit depth, and speed of the handheld.

Slideshow

Similar to the “animate” option, “slideshow” cycles through the images in sequence starting with the selected image. The playback is governed by the slideshow delay settings, and can optionally display image titles beneath each image.

Creating a New Image



TAP on “New” to create a new blank image in the database.

A popup dialog window will appear, allowing you to specify detail about the new blank image. Images can be of any specified size, memory permitting, and one of the five bit-depth formats, if supported by the handheld.

Image Size

Tap on “screen size” to create a new image with the current screen dimensions. Standard low-resolution screens are 160 x 160 pixels, while high-resolution screens are typically 320 x 320 pixels. On devices with removable text writing areas, the screen is commonly 320 x 480 pixels in portrait orientation or 480 x 320 pixels in landscape mode, if supported. Images can be as large as main memory allows.

Image Depth

The image depth determines the image’s available shades or colors. Higher bit depths allow greater color flexibility, but take more memory and are slower to edit. For monochrome devices running PalmOS 4.0 or higher, the maximum grayscale depth of 4-bits is fine, but for color devices, 8-bits is recommended for speed unless working with imported 16-bit natural imagery (photos). The following formats are supported in TealPaint, but the actual depths available may be limited by device hardware or operating system versions.

1-bit	(black and white)
2-bits	(4 gray levels)
4-bits	(16 gray levels)
8-bits	(256 colors)
16-bits	(65536 colors)

Templates

The templates feature allows you to create an image using a predetermined image as a starting point. Templates are useful for artists and professionals who often use a common diagram, reference, or backdrop as a background for images.

To use it, create a database in RAM named “Templates” and fill it with starting images. When you later create a new image in a different database, you can choose “Use template” to select a template image as a starting point for the new image. The template can be used as is, or you can select an option to automatically create a new layer so that all new drawing will occur in a separate layer on top of the template imagery.

Moving and Converting Images

To move, delete, and convert an image to a different bit depth, first select an image by tapping on its description to activate the text cursor, and then select the appropriate choice from these drop down image menus:

Details



Shows information about the selected image

Move Up/Down/Top/Bottom

Moves the selected picture higher or lower in the image list

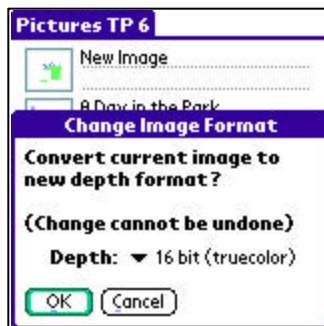
Copy to DB

Adds a copy of the selected image to another image database

Duplicate

Adds a copy of the selected image in the current database

Change Format



Converts an image to a different bit depth

Delete

Deletes the selected image

Importing and Exporting JPEG and BMP Images

Using the image import/export menus, you can use TealPaint to edit or color correct photos and other images in standard formats.

Export to JPEG/BMP (New in 6.52)

Copies the selected image to a BMP file on an external SD, CF, or MS storage card. This is an easy way to export images to a PC-readable format for reading in a card reader.



When saving an image, you are given a choice of several flavors of JPEG or BMP format, as well as an image “quality” setting that lets you specify how closely a saved JPEG must resemble the original source. Higher quality values result in better image quality but larger files.

The different JPG formats are identical except that when saving to an external or internal card volume.

You can also export to RAM, but this is not as useful, as PalmOS requires the image be wrapped in a Palm PDB database wrapper that links it to a specific “owner” application. The different JPEG or BMP flavors let you specify the “owner” application from a list of common jpeg-creation programs. Some owner applications may or may not still recognize a new image, however, if it maintains its own list of “loaded” databases and does not automatically scan memory for new files.

Import from JPEG/BMP (New in 6.52)

This menu reads a JPEG or BMP file into a TealPaint image database, and can be an easy way to import PC images into TealPaint if you have an external card reader to copy files directly to the card.

BMP images can be 1, 4, 8, or 24-bits deep, while JPEG files are always converted to 24-bit. 1 or 4-bit BMP files maintain their depth, while 24-bit files are converted to 16-bits. 8-bit BMPs stay at 8-bits if they use a standard Palm (web) palette, but are converted to 16-bits if they use other colors.

TealPaint can recognize any JPEG or uncompressed BMP files stored on an internal or external card volume, or the RAM “database” versions of these files stored by the following formats:

- RescoViewer JPEG
- RescoViewer BMP
- Palm Camera JPEG
- Zire 71 Camera JPEG
- Sony Clie Camera JPEG
- Public JPEG (copied to RAM using TealPaint or TealMover)
- Public BMP (copied to RAM using TealPaint or TealMover)

NOTE: You can change a file from one type of JPEG to another (changing its owner information) by selecting the file and using the **Details Screen** in TealPaint.

HINT: If you run into problems with TealPaint or external programs finding a JPEG file, try moving the files to an external card where RAM owner information will not be a confounding factor.

Special Functions

Sort Image List

Select this option to sort the images in the database by name or size.

Screen Grab

The screen grab function allows you to take a snapshot image of the handheld screen from another program and import it into TealPaint for viewing and editing. The screen grab function supports multiple resolutions and screen depths including high-resolution 16-bit images.



To grab a screen, select the “Grab Screen” option from the drop down “Options” menu, and select a time delay value to start the countdown timer. You can then exit TealPaint and launch another program. When the time expires, you’ll see a popup window indicating that the screen has been grabbed. Return to TealPaint at that time to automatically import the grabbed screen into TealPaint format.

Note: Grabbed 8-bit screens are assumed to use the PalmOS default system palette. If an external program changes the colors to a custom palette, incorrect colors may be grabbed.

Drawing Screen



The heart of TealPaint’s functionality is located in its **Drawing Screen**. Here, drawing tools are available to add lines, color, and patterns to images as well as special effects.

Drawing tools, brushes, and patterns are accessed via a **Toolbar** at the top of the page, while a view of the current image appears below.

A detailed explanation of TealPaint’s drawing tools and functions appears in the next chapter.

Chapter 2 – Drawing

TealPaint drawing tools and options are available via a toolbar at the top of the screen. From left to right are the menu bar, tools, brushes, patterns, layers, zoom control, and undo button.

Tools



The Tool Menu provides 20 different image drawing and painting tools.

Once a tool is selected, tap or drag in the image area to use the tool.

Pencil

Draws a freehand line using the current brush shape

Paint Bucket

Fills a contiguous area of pixels with the current color and pattern

Hand

Allows you to “drag” the viewing window to another part of an oversized image

Eraser

Erases a rectangular area to the current background color

Spotty Draw

Draws a freehand trail using the current brush shape

Curve Draw

Similar to the pencil, curve draw renders a freehand line but averages pen movement to yield a smoother curved line

Line

Draws a straight line using the current drawing brush

Constrained Line

Draws a straight line, but restricts the angles to vertical, horizontal, or 45 degrees

Rectangle

Draws a rectangular outline in the current drawing brush

Rounded Rectangle

Draws a rectangular outline with rounded corners in the current drawing brush

Circle

Draws a circle in the current drawing brush

Oval

Draws an oval shape in the current drawing brush

Filled Rectangle

Draws a solid filled rectangle

Filled Rounded Rectangle

Draws a solid filled rectangle with rounded corners

Filled Circle

Draws a solid filled circle

Filled Oval

Draws a solid filled oval

Polygon/Shape

Draws either a filled smooth shape or a filled arbitrary multi-point polygon. To draw a polygon, tap the pen from vertex to vertex, tapping on the original point to close the polygon. To draw a smooth filled shape, hold the pen down to draw a smooth filled outline. The polygon or shape outline can define a concave or convex polygon with points that cross.

Eye Dropper

The eye dropper sets the current foreground color to an area tapped on the screen.

Selector

The selector tool allows you to “draw” a rectangle to define an area to move or perform special effects. Once an area is defined, it will be outlined by an animating line. The region can be flipped, rotated, copied, or otherwise manipulated using menu choices, or dragged to another area on the screen with the pen.

Text

The text tool activates an editing cursor for adding text to the current drawing. Once activated, text can be entered via graffiti or keyboard and will be drawn in the current font, which is selected via the text preferences drop down menu.

Grid Snap

The Grid Snap option constrains pen movements so they only lie on vertices of a regular grid, as if they were lining up to intersections on an invisible sheet of graph paper. This helps one draw repeatable lines and shapes, matching the ends of lines with each other, for instance.

Brushes



TealPaint supports 24 different built-in brush shapes, which are used for line and outline drawing tools. Filled-shape operations (line rectangle or circle) ignore the current brush selection.

Patterns and Ink



The Patterns and Ink window allows you to select the current foreground and background colors (or shades) and the current drawing pattern. Most drawing tools use the current foreground color, or both the foreground and background colors if a pattern is active. The eraser tool always draws to the current background color.

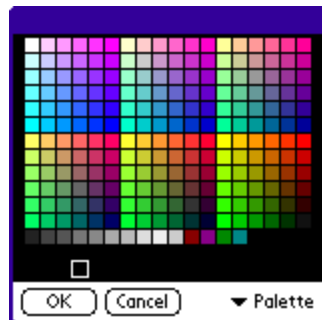
Colors

When in color mode, the last eight colors used appear as the first row of the color palette, followed by a gray scale. Tap on one to set the current foreground color, or select “background” and tap on a choice to set the background color.

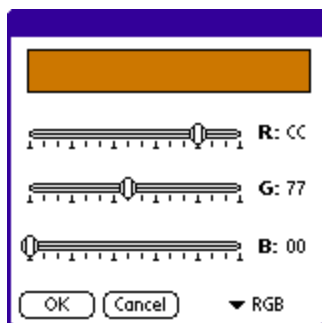
Patterns

Below the color choices are sixteen standard TealPaint fill patterns, which are drawn in both the current foreground and background colors. Select a pattern to draw with that pattern using the current color. When done, select first “blank” pattern to return to a solid color. If both the foreground and background colors are set to the same value, all the patterns will appear blank.

Color Picker

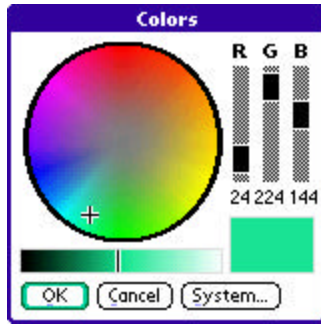


To choose an arbitrary color not in the color palette, tap on the color picker in the upper right corner. Tap on its center to set the foreground color, or on the outer ring to set the background color. The standard PalmOS color picker will appear, allowing you to select a color from the PalmOS standard palette.



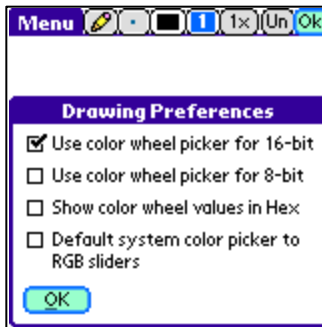
When editing 16-bit images, you can fine-tune your selection by optionally using R-G-B sliders.

Color Wheel



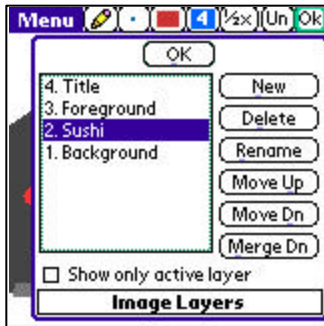
If you are editing a color image, you may also use then a **TealPaint Color Wheel** as a more convenient way to pick similar colors.

In this window, a color can be selected by raw Red-Green-Blue (RGB) values, or by picking it from the current color wheel and brightness controls. The color wheel shows the current selection (indicated by a plus) in a wheel of other colors with the same brightness. The spectrum of colors is represented around the wheel with saturated colors near the outer edge and less saturated colors toward the center. To change a color, simply tap on the new color in the wheel. The change to a different brightness (and update the wheel), tap on the brightness bar below the color wheel.



To use the color wheel, make sure the appropriate "use color wheel" option is set in *Drawing Preferences*, and the color wheel will appear instead of the system color picker, although the latter can still be reached with a *System* button on the color wheel screen. You may choose to use the color wheel when editing 16-bit images, when editing 8-bit images, or both.

Layers



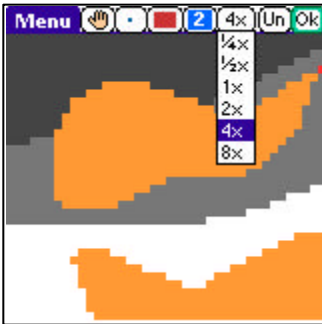
TealPaint supports drawing images in separate, independent layers. Similar to painting on a stack of transparent cellophane sheets, this feature allows experimentation and movement of individual image elements without affect surrounding areas. It also allows one to experiment with adding image elements by making changes on a new foreground layer, erasing the changes if needed using the eraser tool without affecting the original image below.

To create a new layer on layer “stack”, tap on the “New” button. A new blank “sheet” will be added to the top of the layer stack and will be selected, ready for painting. You can delete, rename or move a selected layer, or use the “Merge Down” button to permanently overlay a foreground layer onto the layer immediately below.

When painting in layers, all drawing tools only affect the image in the active layer. Normally, you’ll see all the layers at once, but you can check the “Show only active layer” checkbox to hide all layers except the current active layer. This can be useful when drawing in a layer partially obscured by a higher layer in front.

White is used as a transparent color for foreground layers. Therefore one limitation is that only the background layer can contain a true white. Painting in white in a foreground layer is equivalent to erasing that layer and will show colors from layers below.

Zoom Control



TealPaint support five different viewing zoom levels, from a 1/4x “shrunk” view to an 8x “magnified” view. Notably, all drawing tools are active in all zoom levels.

Zoomed-out levels allow roughing-out an overview of images larger than one screen can display, while zoomed-in levels allow fine details to be added to an image.

Undo

Tap the “Undo” button to undo the last change to an image. TealPaint supports multiple levels of undo, so you can tap “Undo” more than once to undo multiple drawing or erase operations. The number of undo levels supported varies depending on the extent of drawing operations and the size of the undo buffer specified in TealPaint preferences.

Menus

Image Menu

Prev/Next Image

Closes the current images, saving any changes and opening the preceeding/following image in the database

Clone Image

Makes a copy of the current image and inserts it before the current entry in the database

Delete Image

Deletes the current image and opens the next image in the database.

Resize Canvas

Resizes the drawing area of the current image to a specified pixel size. The image data itself is not rescaled, so if the drawing area is shrunk, some image data may be lost.

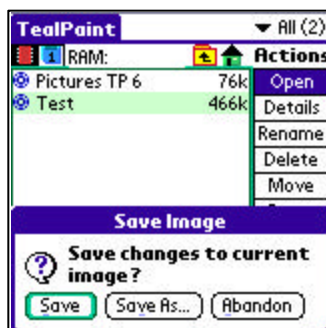
Clear Layer

Erases the current drawing layer to white.

Play Animation/Slideshow

Cycles through the images in the current database in sequence, stopping only when the screen is tapped and held.

Close



Closes the current image and optionally save changes made. This is equivalent to tapping the 'OK' button.

Edit Menu

Undo

Undo the last drawing change

Redo

Undo the last “undo” operation. This menu only works when the last operation was itself an undo. Once a drawing operation is made, “redo” has no effect.

Cut/Copy/Paste

Copies a rectangular area defined by the selector tool to the TealPaint image clipboard, or pastes the clipboard to the current selection. Note: these menus operate on pixels, but do not cut or paste text.

Paste Scaled

Pastes a previously copied rectangle of pixels to the selected rectangular area. If the selected area is smaller or larger than the image on the clipboard, the image will be compressed or stretched to fit.

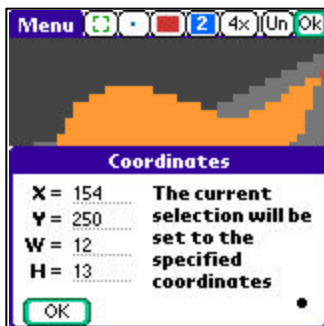
Select All

Selects the current screen contents with the selector tool.

Select None

Deselects any areas selected with the selector tool.

Coordinates



Displays the current selected area in Cartesian coordinates, allowing fine adjustment of the selected area.

Effect Menu

Nudge Up/Down/Left/Right

Moves the pixels in the selected area by one pixel in the specified direction

Flip Vertical/Horizontal

Mirrors the pixels in the selected area

Rotate

Rotates the pixels in the selected area by 90 degrees

Fill/Erase Area

Fills the pixels in the selected area with the foreground/background color

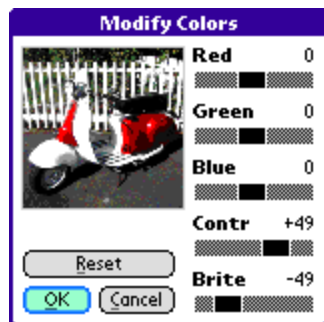
Invert Area

Converts the pixels in the selected area to their photographic negative values

Blur Area

Blurs the pixels in the selected area

Modify Colors (New in 6.52)



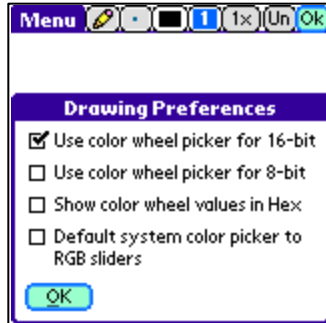
Brings up the *Modify Color* screen, letting you color correct an image or special effects with the color palette. This screen is very useful in fixing pictures taken indoors or under poor lighting conditions.

When using this screen, a rough preview of the image appears, showing either the entire image or a subrectangle of that image if you've previously selected an area using the *selector tool*.

Adjust the sliders to modify the image color balance, brightness, or contrast, and tap on OK to apply those changes. If you change your mind afterwards, you can use the *Undo* button to revert back to the original image.

Option Menu

Drawing Prefs



The drawing preferences screen lets you adjust several options when using the color selection screens. Drawing preference items include:

Default color picker to RGB sliders (16-bit or 8-bit)

Selects RGB sliders instead of the system palette as the default color picking mode when editing 8 and/or 16-bit images. You can choose to use the color wheel (as opposed to the system picker) only for one type of image or for both types, or never.

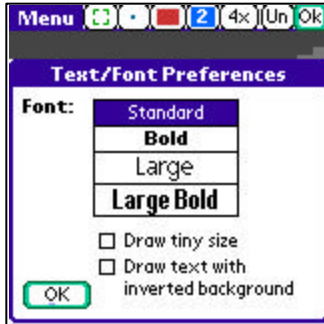
Show color wheel values in Hex

To aid in using the selected colors for web site development, choose this option to display the RGB color values (0-255) in hexadecimal (base 16) numbers.

Default system color picker to RGB values

By default, the system color picker comes up in palette mode, letting you choose one of the 8-bit standard system colors. Choose this option to make the color picker come up using the system color sliders. This option modifies the system color picker that comes up if you are not using the color wheel screen.

Text/Font Prefs



Selects the PalmOS system font to be used for the text tool.

Draw tiny size

On high resolution devices, this option draws text using the small-size versions of the system fonts, drawing the text at one-half size.

Draw text inverted

Draws text inverted, swapping the background color and foreground color.

Anim/Slide Prefs



This option allows you to set the timing when animating an image database or showing it as a slideshow. Actual achievable frame rate will depend on the handheld speed and the depth and size of the images.

You can also choose options here to show each image's title during a slideshow or the frame number during animation.

Buttons

TealPaint uses the TealPoint Standard Button Manager to allow customers powerful control to map buttons and keystrokes to TealPaint tools, actions, and menus. See the appendix for instructions on using the TealPoint Standard Button Manager.

TealPrint Screen

Use this option to print the current area of the image displayed to a graphic-capable printer. TealPrint (a separate program) is required.

Toggle Silkscreen

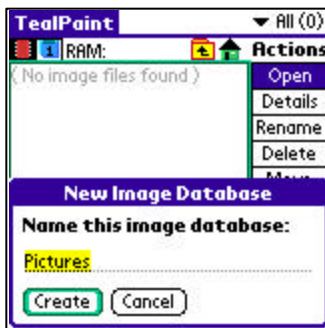
Use this option to turn on or off the full screen (virtual Graffiti) mode on a handheld which supports an application-controlled screen size. Note: some devices (like the Tungsten T3) require the user manually tap on an icon to switch the display mode and do not allow this to be done by an application.

Chapter 3 – Tutorial

In this chapter, we'll progress through a simple tutorial covering how to create and edit an image in TealPaint. We'll use a number of tools and effects, utilizing a number of the program's special features such as magnify mode and layers. Using TealPaint, a relatively complex image can be created surprisingly quickly.

Note: this tutorial assumes either a color device or a late model handheld which supports enough gray scales shades to make a satisfactory image.

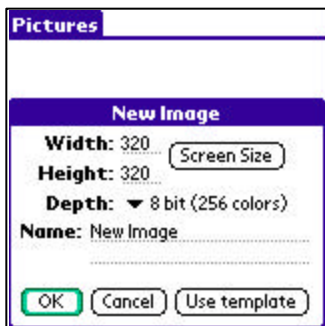
Step 1 – Create and open a new database



From the TealPaint “Main File Screen”, tap on the “New” button to create a new image database. If an expansion card is present, make sure the RAM device is selected to minimize image loading and saving times.

With the “Open” action selected, tap on the database name to open the database for editing.

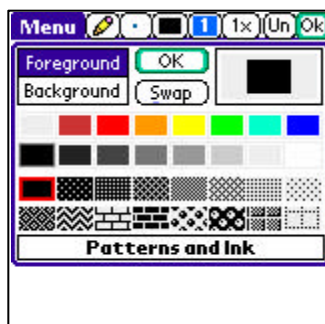
Step 2 – Create and open a new image



Tap on the “New” button on the Image Screen to create a new blank image. On color handhelds, create an 8-bit image, while on monochrome device, choose the highest grayscale depth available (typically 4-bit). Tap on the “Screen Size” button to select a screen-size image, and tap “OK” to create the image.

Once the image has been created, tap on the square-shaped thumbnail image on the left of the description to open it in the Editing Screen.

Step 3 – Set the foreground color to color blue using the color menu



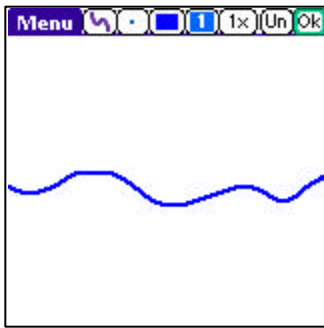
Tap on the “color/pattern” button (the fifth button from the right) to select an initial drawing color. At this time, tap on a dark blue (or dark gray if on a monochrome handheld) to select it as the current foreground color.

Step 4 – Select the curve draw tool



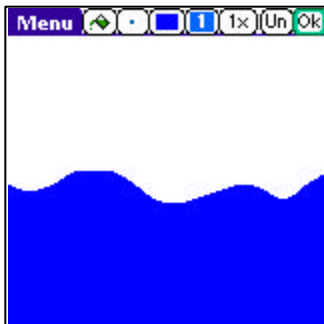
Tap on the tool-select button (seventh from the right) and tap on the squiggle-shaped curve tool in the second row from the top and second column from the left.

Step 5 – Draw a waterline using the curved line tool



Holding down the pen on the screen, draw a curvy line from the left hand side of the screen to the right. If you make a mistake, tap on the “Undo” button (second from the right) and try again. Make sure there are no gaps in the line on either side of the screen. If there are, fill them in with other short lines. This is important for the next step.

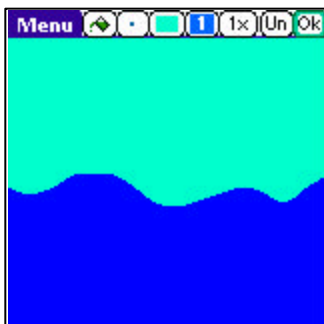
Step 6 – Fill below the waterline using the paint bucket



Tap on the tool-select button and select the paint bucket too (top row, second from the left). Then tap on the lower half of the screen to fill it with blue.

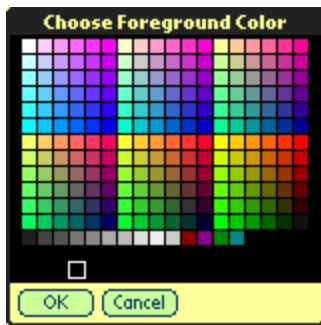
Only the area below the screen should now be blue. If the whole screen is blue, there must be a gap on either side of the screen. If this happens, tap on the “Undo” button and return to step 4 to fill the gap before proceeding.

Step 7 – Fill the sky with light blue



Return to the color/pattern menu and select a lighter blue color, then tap in the upper half of the screen to the new color.

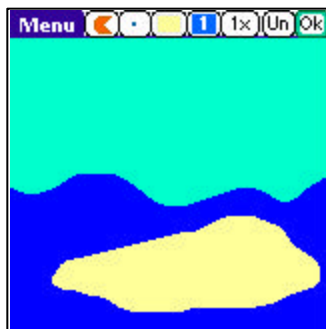
Step 8 – Set the foreground color to beige using the system color picker



Reopen the color menu, but this time we'll want to pick a color that's probably not in the default color list. Tap on the center of the color picker in the top right corner of the color menu. The center of the color picker should be light blue from the previous step.

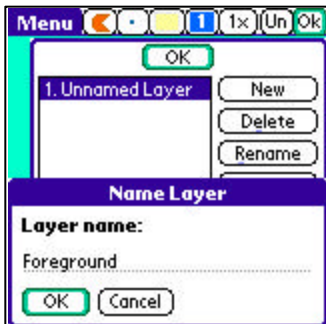
Select a light beige sand color for the next step.

Step 9 – Select and draw an island using the polygon/shape tool



Select the "C"-shaped polygon/shape tool and draw a wide oval in the lower half of the screen.

Step 10 – Add a new layer



For the next steps, we'll want to be drawing in a new foreground layer so we won't disturb the background we've already drawn with any changes we might make.

Tap on the layer-select button (fourth from the right) and tap "New" to create a new layer. Name it "Foreground." Make sure the new layer is highlighted before tapping "OK". The layer button should now read "2" instead of "1" to indicate that the second layer is now active.

Step 11 – Draw a tree trunk using the polygon tool



Select a medium brown color and draw a tree trunk in the middle of the island using the polygon tool.

Step 12 – Draw coconuts using the filled circle tool



Select an orange color and the filled circle tool from the fourth row and third column of the tools menu.

Draw three circles near the top of the tree trunk with the circle tool. Tap on the image where you want the center of each circle to go and drag the pen outwards until the circle grows to the size you want.

Step 13 – Draw leaves using the polygon tool



Use the polygon tool to draw leaves on the tree in one or two green shades. Draw each leaf individually using fairly wavy curved lines.

Step 14 – Enclose the tree using the selector tool



Choose the selector tool (fifth row, third column) and box a region around the tree. The highlighted area will be shown with an animating rectangle.

Step 15 – Move the tree using the selector tool



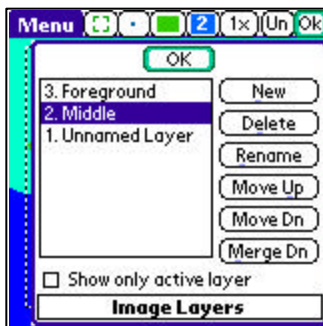
Drag the tree to the left by tapping in the center of the selected area and dragging to the left. Note that when you release the pen, only the tree itself stays moved. The background water and island, residing on a different layer, remain unaffected because they are on another layer.

Step 16 – Copy the tree to the clipboard



With the tree selected (reselect it if it is not), copy the tree to the clipboard using the “Copy” drop down menu.

Step 17 – Add a new intermediate layer



Create a new layer using the layer menu and name it “Middle”. Move it below the foreground layer by tapping the “Move Down” button. Make sure it is selected before tapping “OK”.

Step 18 – Paste a smaller copy of the tree



Use the selector tool to highlight a region to receive another tree, and choose “Paste Scaled” to insert a tree shrunk down to fit the new rectangle.

Step 19 – Add a title using the text tool



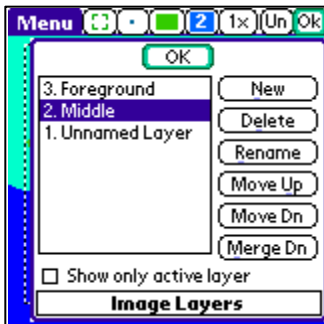
Select the text tool (fifth row, fourth column) and tap near the bottom of the screen where the title should be added. Enter characters using Graffiti or your handheld's keyboard, if applicable.

Step 20 – Add a sun using the circle tool



Select a circle tool and draw a circle for the sun in yellow. If the sun appears intersects with a tree, make sure you draw it in the background layer so it appears behind the tree.

Step 21 – Merge layers



Once you are satisfied with the layout of the image layers, merge them back into a single layer. Do this by going into the layer menu, choosing a foreground layer, and tapping on “Merge Down” to write that layer onto the layer below. Repeat until only one layer is left.

Step 22 – Select the tree brown color using the eye dropper



Select the eyedropper tool (fifth row, second column) and tap on a tree to set the current foreground color to the tree color.

Step 23 – Swap the foreground/background colors and select pattern



Open the color picker and tap on the “Swap” button to set the foreground color to the picked tree color. Then select a lighter brown for the foreground color.

Once that is done, reopen the color menu, if necessary and select the darker (light brown on dark) brick pattern.

Note: some operations, such as dragging selected areas with the selector tool, erase to the background color. The background color should be returned to pure white before doing this or similar operation on a foreground layer, as pure white is used as the transparent color for these layers.

Step 24 – Magnify details using the zoom control



Use the zoom control (third from the right) to zoom into the image for better detail viewing. Choose 2x or 4x for now.

If necessary, use the hand tool or 5-way scroll buttons to position the image so that a tree trunk is viewable.

Step 25 – Draw highlights using the curve draw tool



Draw highlights on the trunks using the curve draw tool. The lines will be drawn using the current pattern and colors, which should add texture to the tree trunks.

Step 26 – Add details and finishing touches



Using the tools you've already used, you can add finishing touches such as shadows, birds, clouds, monkeys, and other details.

Feel free to experiment, and most of all, have fun!

Chapter 4 – Tips and Tricks

Below are hints on using TealPaint effectively and solving some of the “gotchas” commonly encountered using the program.

Using External Storage Cards

TealPaint supports viewing and editing images directly off SD, CF and other external storage cards as well as in main memory. This can save on main memory usage when dealing with many pictures. The PalmOS database file format, however, was not designed with write-ability in mind, and can be very slow to save changes when a database starts getting large. To avoid unnecessary wait times, try to limit card-based databases to either images which (like photos) you don't normally need to edit, or small databases of only a few images.

Using Layers

Use layers liberally to give you maximum flexibility when manipulating objects. Remember to name the layers so you know what goes on what. When you're satisfied with particular portions of the image, however, merge layers together to minimize storage space and maximize drawing speed. Remember that true white (color 0) is used as the transparent color for foreground layers, and thus you should keep your background color set to color 0 most of the time when drawing in foreground layers.

Drawing Large Text



If you are running on a high-resolution handheld, you can set “Tiny Mode” in text preferences to utilize the device's internal low-resolution fonts to give you an extra set of half-size fonts.

If you need to render fonts larger than normal size, however, there is another simple trick you can use. When painting in one of the zoomed-out magnification levels, drawing is actually done internally on a screen-sized bitmap, and this is scaled up to fit the whole image canvas. Thus, if you draw text in a zoomed-out (1/2 x or 1/4 x modes) the text will be drawn at screen resolution and automatically scaled up 2x or 4x when applied to the image. The ROM fonts are bitmap fonts, however, so you might still want to zoom in and touch up the “jaggies” in the scaled up text after drawing it.

Text drawing also supports patterns, so with a little creativity, you can use patterns to generate interested “ghost” text or similar effects.

Drawing Polygons and Shapes

The Polygon/Shape tool is our favorite. Using it in shape mode, it can make a few crudely drawn squiggles look like modern art. Remember though, that it has two modes, and that by tapping on the screen instead of drawing, you can create precise solid areas delimited by straight line segments. You can even start a region in polygon mode and drag the stylus to finish it in shape mode.

Using Blur with transparent layers

The TealPaint Blur effect, like all effects, only modifies the current layer. When editing on a foreground layer, keep in mind that the transparent portions of the image appear as pure white (color 0) and that this will be picked up by the blur tool if you blur a foreground object that shares an edge with a transparent area. You can avoid this by using the paint bucket to temporarily filling the transparent area with a shade similar to what is underneath the foreground object and filling it back to color 0 afterwards.

Animation Speed

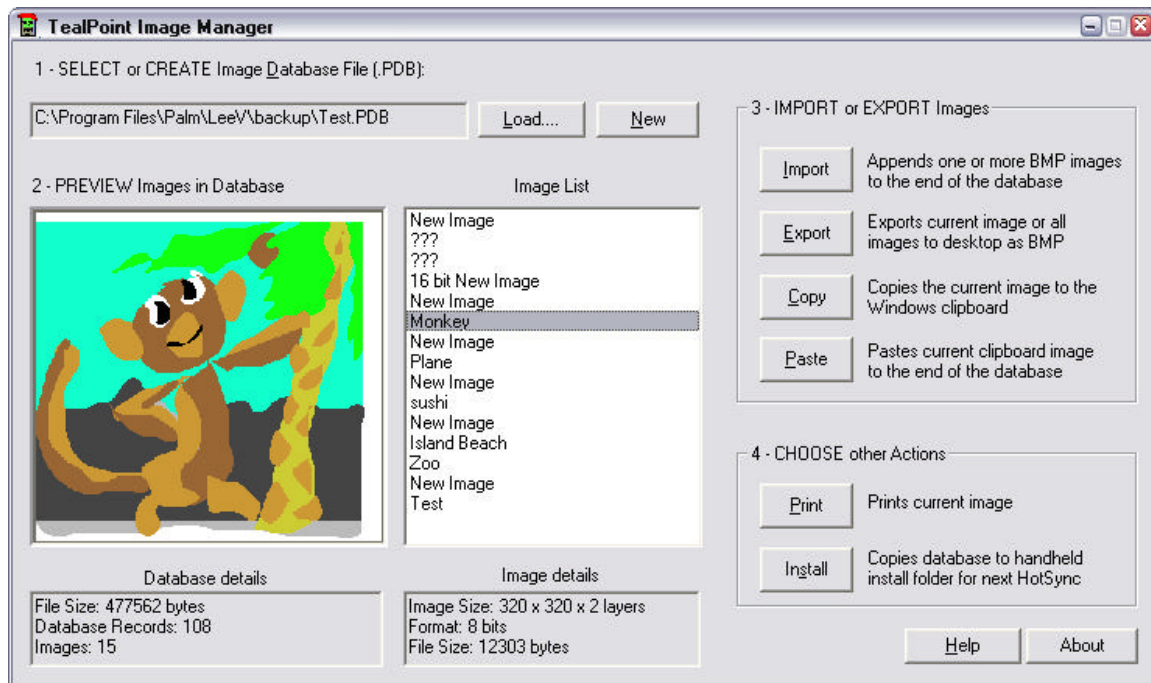
When creating images for animation, keep in mind that images cannot play back any faster than they can load. To maximize playback speed, minimize the image sizes and color depths used.

High-resolution images are four times larger and 4 times slower than an equivalent low resolution image. 16-bit images are twice as slow as 8-bit ones. On a high-resolution device, if you create images at $\frac{1}{2}$ resolution (typically 160x160), they will automatically be scaled up 2x during playback but will load 4 times faster than a 320x320 image.

Collapse any layers in the images to increase speed further, and play the animation from RAM instead of an external card if possible.

Chapter 5 – TealPoint Image Manager

The **TealPoint Image Manager** (IMAGEMGR.EXE) is a Windows utility that replaces the *TealPaint* Image Manager that accompanied older versions of TealPaint. While you can now import and export JPEG and BMP images directly inside TealPaint, you can also use the *TealPoint Image Manager* to import or export images to or from TealPaint-format databases, view them on the desktop, or print them to a Windows printer.



Step 1 – Select a Database File

You can create a new TealPaint-format database, or find the backup of an existing one created on your handheld. Click on “Load” or load an existing database or “New” to create a new one.

When you HotSync your handheld, *TealPaint* image databases are automatically backed up to a folder called “*BACKUP*” which in turn resides in a folder named after your handheld’s **HotSync User Name** in the Palm install folder.

For instance, if your user name is “*John Smith*”, the backup folder would be in another folder named “*SmithJ*”. The backed-up files are named the same as the databases on the PalmPilot, but have a '.PDB' extension, like “*PICTURES.PDB*.”

NOTE: All PalmOS database files have a “.PDB” file extension. If you find an image database on, say, a website that also has a .PDB extension, it may not be (and probably is not) in TealPaint format, so don’t be surprised if the image manager cannot load it.

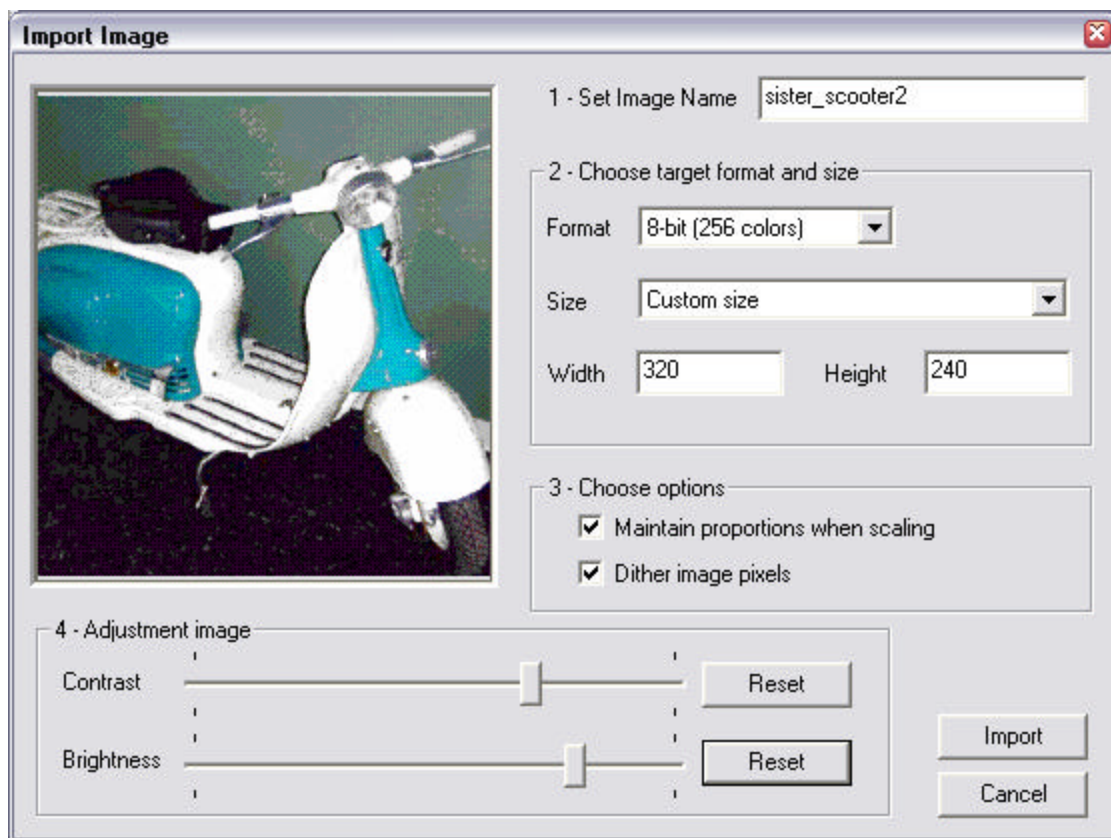
Step 2 – Preview images

Once a database is loaded, you can view any of the images in the database. Scroll the Image List to see the list of images by selection. Tap on a name to see that image to the left.

Step 3 – Import or Export Images

Importing an Image

Click on “Import” to import images from .BMP format. You can also click “Paste” to import an image copied to the Windows clipboard from another program or captured using the PrintScreen button. The Image Import window will appear, with a preview of how the image will appear.



On this screen you can set the target bit depth and image size of the final imported image, and also adjust the brightness and contrast of the converted image. Two options are also present:

Maintain proportions when scaling

When setting image sizes or fitting the image to a screen size, this option makes sure the image's aspect ratio remains intact. When this option is not set, you'll be free to stretch the image vertically or horizontally out of shape.

Dither image pixels

Allows the program to use patterns of similar colors to simulate the presence of intermediate colors. This option can greatly enhance the appearance of photographic images in grayscale or 8-bit modes.

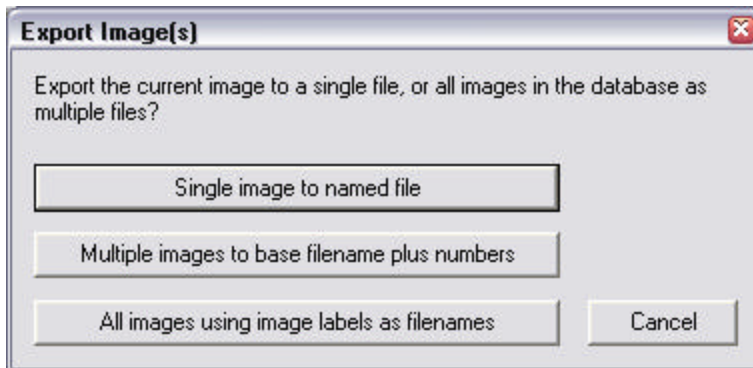
Importing Multiple Images

When selecting a .BMP image to import, you can actually use the SHIFT button to choose more than one image at a time if they reside in the same folder, and import them in one step into the TealPaint image database.

When you do so, the first image selected will appear as normal, but a new "Import All" button will appear in the lower right. Click on it to import all the images together using the same settings, or "Import" to import only the first image and reopen the Import window with the next image selected.

Exporting Images

Click on the "Export" button to export one or more images to .BMP format, or "Copy" to export the currently selected image to the Windows clipboard so that it can be pasted into a PC-based paint or other program.



You have three export choices:

Single image to named file

The current image shown in the main window will be exported to a .BMP file you specify

Multiple images to base filename plus numbers

All the images in the database will be exported in order as numbered files. You specify the base filename, after which three numbers will be added. For instance, if you specify "Fred.bmp", the actual files will be named "Fred000.bmp", "Fred001.bmp", "Fred002.bmp", and so on.

All images using image labels as filenames

All images in the database will be exported using each image's name as its filename. The Image Manager will add the .BMP extension as necessary, and will add "[2]", "[3]", etc to images whose names conflict with existing files or previous images. You specify a default filename to be used for files with no description or whose name consists of invalid Windows filename characters.

Step 4 – Other Actions

Printing an Image

Click on “Print” to print the current image to your Windows printer.

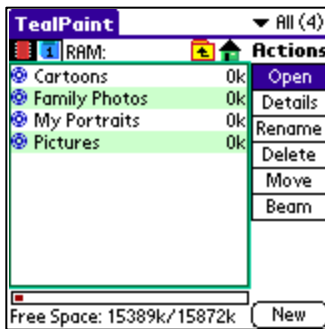
Install Database

Once changes have been made to a database, you need to “install” the changes to copy them back to the handheld. This is true even if the file exists in the user backup folder, as the Palm Desktop will not automatically mirror the changes back. In fact, it is even more important to install a database here, as the backup file will get overwritten if the database is modified on the handheld.

You can use the Palm Install Tool in the Palm Desktop program to install the databases, or tap on the “Install” button in the Image Manager to automatically install the current database for you.

NOTE: Never make changes to the same database (or databases of the same name) on both the desktop and handheld at the same time. The entire database is backed up when changes are made on the handheld, and entire databases (not just individual images) completely overwrite the same file on the handheld when you install them.

Appendix A – TealPoint File List



File Lists

TealPoint standard File Lists are standard elements in new TealPoint applications. They provide a crucial building block missing from PalmOS, that of a consistent, standard interface for navigating device and folders and selecting individual files.

File lists display relevant files in a particular storage device, folder, and category, along with optional icons and typically additional information, such as the file size in kilobytes.

Navigation

Use the up and down scroll buttons to page through the list of items, and tap on a file to select or activate it. Typing a letter or writing it with Graffiti will seek the list to the next entry starting with that letter.

The Standard File List also supports navigation via device-specific controls, including:

Palm 5-way Control

Use the select button to highlight the top file in the list. Once an entry is highlighted, the scroll buttons can move the current selection up and down. A second press of the select button will activate (open) the selected file or folder.

Clie Jog Dial

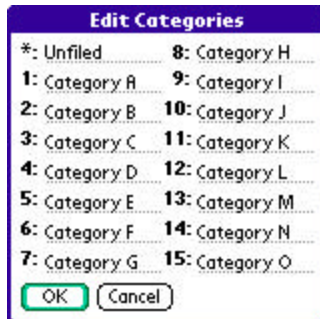
An inward *press* of the jog dial selects a file entry, while scrolling the jog dial *up* and *down* changes the highlighted entry. The jog *back* button, if present, moves up one folder in the directory structure if the current location is within a sub-folder. In the root of a device, or on a device, like RAM, which does not support folders, the *back* button acts normally, returning to the application launcher screen.

Accessory Keyboards

On a PC simulator or add-on accessory keyboard, the up, down, left, and right arrow keys function as Palm 5-way control buttons, while the *enter* key acts as *select*. The backspace key navigates to the parent folder.

Categories

Categories, if supported, allow manual sorting of individual files.



You can select or edit categories by tapping on the category selection button in the upper right hand corner of the screen. The count of items present in each category appears in parentheses next to each category name. Categories are supported for files present in both RAM and flash memory, and can be named from the *Categories* drop down menu.

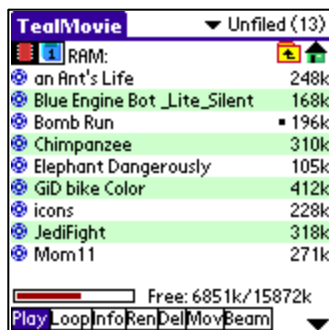
Flash Memory

Internal Flash

A dot indicator appears to the left of a file's name to indicate any files which are installed in ROM or PalmOS-formatted flash memory such as a Visor Flash module or unused operating system flash memory. Files in these internal locations are generally read-only and cannot be modified or moved into categories.

External Flash

External VFS (Virtual File System) flash card storage devices, such as Memory Stick, Compact Flash or SD/MMC cards are supported by the TealPoint File Lists if appropriate to the application.



When a VFS-compatible card is detected, an extra row of icons will appear along the top of the File List for navigating to folders on the external device. On the left are the device icons, used to select the current card or location to list files. The first icon is the memory icon, and is followed by a numbered card icon for every expansion card found.

Most devices will support at most one external storage card, and will thus only have one card icon. The Handera 330, however, can support two simultaneous data cards; so two card icons can be present if both slots are occupied, or if a device has more than one driver installed for a single card slot.

To show the files on an external card, simply tap on the corresponding card icon. External file devices support a hierarchical folder system, which are fully supported to help organize files.

If sub-folders are present in the current folder, simply tap on them to move “down” into the sub-folder to see its contents. To the right of the device icons is a display showing the current directory on the card, followed by two folder navigation buttons. Use the first *parent* icon to move up one level to the folder that contains the current folder. Tap on the rightmost *root* or *home* icon to move all the way back up to the topmost folder.

Appendix B – TealPoint File Manager



When a “Move” action is available in a TealPoint File List, the TealPoint standard File Manager provides a consistent interface for copying or moving files.

Moving/Copying Files

The TealPoint Standard File Manager allows you to copy or move the pre-selected file from one folder or device to another. The contents of a target location to receive the file appear in the lower half of the screen. Simply select the destination device and folder using the file list and device/navigation icons, and tap on the **Copy** or **Move** buttons to start. Files may be copied between RAM and external storage cards, or between folders on the same storage card. The target location must differ from where the source file already exists. Note that items in the list are not selectable, but are present to indicate contents which may already be present in the target location for the pre-selected file.

Note that operations are limited to what is supported by the installed hardware and system software.

Palm Memory

PalmOS memory does not support folders, and can normally only hold PalmOS-specific resource (.PRC) and database (.PDB) files. Desktop-specific files (such as .WAV, .TXT, etc.) can normally only be stored on external expansion cards, or if copied to RAM, are typically not recognized by applications.

MemPlug

The system software MemPlug expansion Springboard modules does not support the VFS-standard interface for moving of files between Cards and RAM, but third-party add-ons such as the Kopsis Engineering VFS library can add this capability.

Sony CLIE

Sony CLIE handhelds running older versions of the PalmOS system software (prior to PalmOS 4.0) do not support copying files to any folders outside the root standard “MSSONY” folder. Subfolders can be freely made and used within the MSSONY folder however.

An additional **Folder** button is present for creating and deleting folders. If the current target is on a device which supports folders, tap on it to either delete the current folder location (if it is empty) or create a new subfolder in the current target location.

Appendix C – TealPoint Button Manager

Description



Accessible from a “Buttons” menu options, the TealPoint standard Button Manager provides a powerful and flexible interface for customizing the hardware button and key mappings for TealPoint applications. Mappings can be individualized for different locations (screens) in the application, and mappings can be created to support new buttons, jog-dials, and directional pads on future devices.

Changing Default Mappings

To modify the mappings for a particular screen, first select the screen from the pick list of locations at the top of the screen. A list of mappable buttons/controls appears on the left. When an item is selected, its corresponding action is shown on the right. To change a mapping, simply select the new action when the key or button is highlighted.

Creating New Mappings



To create a mapping for a new key or button which is not listed, tap on the *New* button to bring up the custom code dialog. Press the button or control to be mapped, to capture the character its corresponding PalmOS key codes, and tap *OK* to create the key.

Note: Only keys which generate a standard PalmOS key code can be mapped. Some keys (like shift keys on some device keyboards) are handled in hardware and cannot be mapped.

Appendix D – TealPoint Pen-Free Navigation

TealPoint Pen-Free Navigation provides access to almost all programs screens and functions via keyboard or device 5-way rocker pad. Similar to the 5-way interface on the Treo 600, TICL pen-free navigation also adds similar functionality to older PalmOS handhelds with directional pads or devices with add-on keyboard peripherals.

Pad Navigation



With 5-way controls, a current button, checkbox, or text field control is highlighted in blue-green or drawn bolded in monochrome handhelds. The current control is changed by presses of the directional pad, which moves the selection to a control in the general direction of the button press. The center “select” button will activate the highlighted control, pressing buttons, toggling checkboxes, or turn on or off the cursor in a text entry field.

On some devices, like the Treo600, the direction pad is mapped in the operating system to move the cursor in an active text field.

When this is the case, the direction pad will move the cursor by default, but will change the active control selection once the cursor has reached the end of the text field and can move no further in that direction.

Keyboard Navigation

With an add-on keyboard, arrow keys replace the directional pad of a 5-way control. To select a control, the Enter key may be used, except when the text cursor is active in a multi-line text field. When this is true, the Enter key will enter a line break into the text field instead.

Accelerator Keys

On screens without text entry fields or other elements which accept keystroke input, buttons may also support an accelerator key which may be pressed to simulate a press of the key. When this is the case, the letter is shown underlined in the button.

Appendix E – Compatibility Notes

Image Formats

TealPaint Image Databases are compatible with other *TealPaint* programs such as *TealDoc*, *TealLock*, *TealInfo*, and *TealNotes*. For versions of programs released prior to January 2004, however, images must be 160x160 or smaller and 8-bits or lower in depth to be recognized. These programs will be updated as necessary and appropriate to support high-resolution images as part of their normal upgrade releases.

TealPaint is not compatible with *Imageviewer* files or other proprietary formats commonly found on the Internet, despite their .PDB file extension. “PDB” stands for “Palm Database”, and is the extension used for *ALL* PalmOS database files, no matter what their format or purpose is on the handheld. If you download an image file and install it on the handheld but TealPaint cannot find it, chances are that it is not a TealPaint file.

Macintosh

TealPaint is fully compatible with the Macintosh, as it runs entirely on the Palm regardless of whether it is installed from a PC or a Mac. The conversion utilities included in the base archive are Windows-only, however, as we are not Macintosh programmers and are not in a position to make a full Macintosh utility.

Check the TealPaint page on the TealPoint web site for a Mac-classic version of our basic (and definitively non-mac) command line utility PICUTIL, which may be usable as a basic file converter. You may also be able to use the Windows version of IMAGEMGR or PICTUTIL under a Windows emulator.

Use as an external editor

TealPaint supports a simple calling convention that allows it to be used as an external editor for other programs, opening a TealPaint database for editing, and returning to the original host when done. TealNotes uses this mechanism to edit images with more tools than the standard TealNotes set. Visit the TealPoint software “developers” page (www.tealpoint.com/developr.htm) for more information on adding this feature to your own programs.

Appendix F – Using PicUtil

For performing batch operations, **PicUtil**, a simple command-line utility is also included. A version of PicUtil is also available for Macintosh classic computers.

PicUtil performs many of the same operations as the *TealPoint Image Manager*, but using a primitive keyboard-based interface.

Interactive Mode

When you run PicUtil, you will be presented with a text menu of operations to perform. Enter the letter of an operation to perform.

```
C:\WINDOWS>picutil
-----
PICUTIL Image management utility for TealPaint
Version 6.00.00, Jan 1 2004
(c)1998-2004 TealPoint Software, All Rights Reserved
-----

Menu:
  (L) = List images in TealPaint database
  (N) = Create new TealPaint database
  (I) = Import a BMP image to a TealPaint DB
  (E) = Export a BMP image from a TealPaint DB
  (Q) = Quit

Please Enter Selection->
```

After you select a choice, you'll be asked for any other necessary information to complete the operation. In the example below, you need to enter the path to an image database to list. Typically, it's best to copy the database to the same folder as PicUtil before running the utility. Then you can simply enter the name of the database instead of describing a directory path to it.

```
Please Enter Selection-> 1

Enter TealPaint .PDB file to list (in this folder or use full path) ->pictures.pdb

5 Record(s) Found

0 . (160 x 146) 8857 bytes, 256 colors: Summit (8-bit)
1 . (160 x 146) 5044 bytes, 16 colors: Summit (4-bit)
2 . (160 x 146) 2283 bytes, 4 colors: Summit (2-bit)
3 . (160 x 146) 1128 bytes, 2 colors: Summit (1-bit)
4 . (160 x 146) 13295 bytes, 256 colors: Space Cowboy
```

When done, you can choose the "Q" option to quit PicUtil, or the close menu on the Macintosh version.

Batch Mode

PicUtil supports batch-mode commands for automating common conversion operations. For a full list of batch commands, run PicUtil from the command line with the "/" parameter. Batch mode does not apply to the Macintosh, of course, which does not have a command line interface.


```

P:\tealpnt\picutil>picutil /?
-----
PICUTIL Image management utility for TealPaint
Version 6.00.00, Jan 1 2004
(c)1998-2004 TealPoint Software, All Rights Reserved
-----
Usage: PICUTIL [<options>]
    where <options> =
        -l <.pdb file>                = List images in TealPaint database
        -n <.pdb file>                = Create new TealPaint database
        -e <.pdb file> <.bmp file> <index> = Export BMP image from TealPaint DB
        -i <.pdb file> <.bmp file>    = Import BMP image to TealPaint DB

```


Appendix G – Products

Visit us online for our complete product line, including:

SHORTCIRCUIT (<http://www.tealpoint.com/softshrt.htm>)

A new twist on gameplay fused from your all time action puzzle favorite games, connect falling conduit pieces into explosive loops in this frantic race against the clock.

SUDOKUADDICT (<http://www.tealpoint.com/softsudo.htm>)

Sudoku Addict brings to your handheld the addictive worldwide puzzle craze that has displaced crossword puzzles in many newspapers in Great Britain and Japan.

TEALAGENT (<http://www.tealpoint.com/softagnt.htm>)

Get news, movie times, stock quotes, driving directions, web pages and more without need for a wireless connection. TealAgent fetches and formats web-based content for offline viewing.

TEALALIAS (<http://www.tealpoint.com/softalia.htm>)

Free up memory and make the most of external expansion cards. Placeholder 'Alias' shortcut files automatically find, load, and launch apps and data from external SD cards, increasing free main memory.

TEALAUTO (<http://www.tealpoint.com/softauto.htm>)

Track and graph automobile mileage, service, and expenses with TealAuto, the complete log book for your car or any vehicle. Extensive customization options and unmatched in features and functionality.

TEALBACKUP (<http://www.tealpoint.com/softback.htm>)

Backup your valuable data with TealBackup, supporting manual and automatic backups to SD/MMC/CF cards and Memory Stick, backups through HotSync, and optional compression and encryption.

TEALDESKTOP (<http://www.tealpoint.com/softdesk.htm>)

Launch applications with TealDesktop, the themed replacement for the standard system launcher screen with tabs, multiple card folders, drag and drop, and more

TEALDOC (<http://www.tealpoint.com/softdoc.htm>)

Read, edit, and browse documents, Doc files, eBooks and text files with TealDoc, the enhanced doc reader. Extensive display and customization options; TealDoc is unmatched in features and usability.

TEALECHO (<http://www.tealpoint.com/softecho.htm>)

Improve your Graffiti text input speed and accuracy, seeing what you write with TealEcho digital "ink". No more writing blind!

TEALGLANCE (<http://www.tealpoint.com/softglnc.htm>)

See the time, date, upcoming appointments and todo items at power-up with TealGlance. The TealGlance pop-up utility comes up when you power up your handheld letting you see your day "at a glance."

TEALINFO (<http://www.tealpoint.com/softinfo.htm>)

Lookup postal rates, area codes, tip tables, schedules, airports, and info from hundreds of free TealInfo databases. Create you own mini-apps; a handheld reference library.

TEALLAUNCH (<http://www.tealpoint.com/softlnch.htm>)

Launch applications instantly with the TealLaunch pop-up launcher and button/stroke-mapping utility. Map applications to button presses and pen swipes so you can get to your apps quickly.

TEALLOCK (<http://www.tealpoint.com/softlock.htm>)

Secure and protect your handheld with TealLock, the automatic locking program with encryption and card support. TealLock has unmatched features and customization options for personal or corporate use.

TEALMAGNIFY (<http://www.tealpoint.com/softlens.htm>)

Save your eyesight with TealMagnify, an ever-ready magnifying glass that works with most any program. TealMagnify lets you enlarge the screen for those times the text is too small to read.

TEALMASTER (<http://www.tealpoint.com/softmstr.htm>)

Replace Hackmaster with TealMaster, the supercharged 100%-compatible system extensions manager. TealMaster adds enhanced stability, configuration and diagnostic features and PalmOS 5.0 hack emulation.

TEALMEAL (<http://www.tealpoint.com/softmeal.htm>)

Save and recall your favorite restaurants with TealMeal, the personal restaurant database. With TealMeal's handy sorting and selection options, never ask "where to eat" again.

TEALMEMBRAIN (<http://www.tealpoint.com/softmemb.htm>)

Stop crashes and monitor your memory use with TealMemBrain, the application stack stabilizer. TealMemBrain boosts your stack space on OS3 and OS4 handhelds, eliminating the major cause of system instability.

TEALMOVER (<http://www.tealpoint.com/softmovr.htm>)

Beam, delete, rename, and copy files with TealMover, the file management utility for SD/CF/MS cards. TealMover lets you see, move, modify, hex edit, and delete individual files.

TEALMOVIE (<http://www.tealpoint.com/softmovi.htm>)

Play and convert high-quality video and synchronized sound with the TealMovie multimedia system. TealMovie includes a handheld audio/movie player and a Windows AVI/MPEG/Quicktime converter program.

TEALNOTES (<http://www.tealpoint.com/softnote.htm>)

Insert freehand graphics anywhere with TealNotes "sticky notes" for Palm OS. TealNotes can be inserted into memos, to-do lists, address book entries--almost anywhere you currently have editable text.

TEALPAINT (<http://www.tealpoint.com/softpnt.htm>)

Paint, sketch, or draw with TealPaint, the all-in-one graphics paint program for PalmOS. Highlights include 20 tools, 16 patterns, 24 brushes, zoom, hires, layers, multi-undo, and a desktop converter.

TEALPHONE (<http://www.tealpoint.com/softphon.htm>)

Supercharge the address book with TealPhone, the contacts replacement with superior interface and options. Highlights include enhanced display, search, phone-dialing, groups, and linking.

TEALPRINT (<http://www.tealpoint.com/softprnt.htm>)

Print text and graphics to IR, serial, and Windows printers with TealPrint. With numerous connection options, TealPrint, is the all-in-one text and graphic printing solution.

TEALSAFE (<http://www.tealpoint.com/softsafe.htm>)

Store your passwords, credit cards, PIN numbers, and bank accounts in the TealSafe data wallet. With maximum security and encryption, TealSafe is a must for features and security.

TEALSCRIPT (<http://www.tealpoint.com/softscrp.htm>)

Replace or restore Graffiti with TealScript, the text recognition system you can customize. Unlike other systems, you can make or change your own strokes for better speed and accuracy.

TEALTRACKER (<http://www.tealpoint.com/softtrac.htm>)

Track time and expenses with a fast, easy to use interface that requires minimal effort. Generate reports and export data to a spreadsheet. TealTracker is your personal time clock.

TEALTOOLS (<http://www.tealpoint.com/softtool.htm>)

Improve productivity with TealTools pop-up Palm Desk Accessories. TealTools includes a popup calculator, clock/stopwatch, preferences panel, editing panel, memopad, and a file/backup manager.

Appendix H – Revision History

Version 6.53 – February 15, 2006

- Fixed rotation tool to work with selections wider than 64 pixels
- Fixed database details screen from modifying database type and creator (which hid databases)

Version 6.52 – February 5, 2006

- Added ability to directly import and export JPEG files to and from image database
- Added ability to browse or import JPEG and BMP images from main list screen
- Added ability to adjust the color balance or brightness and contrast of an image or selected area (menu)
- Added automatic edge pen-snap on high-resolution devices to allow drawing all the way to right and bottom edges of the display
- Added numeric tagging of number entry fields throughout program (auto num-shifts on treos)
- Added support for accessing hidden internal card volumes (where images are stored on a treo 650)
- Added hot-scrolling to file dialog screens
- Added missing text edit menus to windows with text entry fields (as per Palm style guidelines)
- Added missing shift indicators to windows with text entry fields (as per Palm style guidelines)
- Improved (greatly) speed of saving images to SD cards
- Fixed system incompatibilities with z22 handheld
- Fixed crash when flood-filling a shape with the same color in 16-bit mode
- Fixed crash when trying to flood fill an overly-complex shape (stack overflow)
- Fixed saving of changes to image descriptions before deleting or duplicating an image
- Fixed selection of menus using 5-way select button

Version 6.42 - February 16, 2005

- Made smooth drawing tool smoother when zoomed up or on low-res device
- Added new 5-way navigation order mappings on various screens to match new UI guidelines
- Added automatic activation of text fields on popup dialogs (e.g. reg key entry screen)
- Fixed button mapping for zoom-in and zoom-out actions
- Fixed active control highlighting on Tungsten T5 in landscape mode
- Fixed custom drawing routines for Tungsten T5 left-handed landscape mode
- Fixed display of menus and checkbox controls on dark color schemes

Version 6.40 - November 16, 2004

- Fixed full screen support on Tungsten T5 after opening and closing color palette or other system dialog
- Fixed flood fill to reach screen edge

Version 6.39 - November 5, 2004

- Fixed pick list selection on Tungsten T5
- Added compatibility with virtual graffiti area on T5
- Improved 5-way highlights for selector, checkbox, and pick list controls
- Fixed thumbnail drawing when selecting with 5-way control

Version 6.37 – September 24, 2004

- Fixed text tool word wrapping for multiline text
- Fixed text tool clipping on OS4 Sony CLIE handhelds

Version 6.35 – September 14, 2004

- Added ability to import BMP files directly from storage card
- Fixed exporting multi-layer images to BMP
- Added support for exporting to 1-bit, 4-bit and 8-bit BMPs (was only 24 bit)
- Sped up image saving on ARM handhelds
- Brightened button highlights for 5-way navigation

- Added Treo600 5-way support for navigating menus
- Added confirmation dialog before closing image
- Improved thumbnail rendering for small images

Version 6.31 – June 17, 2004

- Fixed delay opening windows when painting in 16-bit mode

Version 6.30 - May 25, 2004

- Added new optional color-wheel color picker for color display modes
- Added optional HEX display mode for color-wheel selector
- Added ARM-optimized compression code for much faster image-saving on OS5 handhelds
- Added support for TH-55 full screen mode
- Added drag bar to main database list
- Added drag bar to export/copy lists
- Added optional keyboard mapping action to scroll file list display (without selection)
- Fixed BMP export menu not to disturb main list path

Version 6.22 – March 26, 2004

- Fixed support for screen grabbing on OS4-based hires Sony CLIEs
- Fixed icon drawing on Acer handheld
- Added new external app calling mechanism for TealDoc 6
- Added check to remove stray pen points generated by flakey pen digitizer hardware

Version 6.20 – March 10, 2004

- Increased speed of drawing on OS5.2+ devices
- Added support for landscape display on Alphasmart Dana
- Added warning when opening an image with more colors that the current devices supports
- Fixed screen size update on TapWave Zodiac
- Fixed scrolling problems after seeking up in list with graffiti stroke

Version 6.00 January 1, 2004

TealPaint 6 is a brand new program, written from scratch with all new code to replace TealPaint 5 whose aging assembly-language code base was no longer expandable. Notable new additions include:

- Added all-new super-improved interface
- Added high resolution support
- Added full screen support for HandEra, Sony Clie, Tungsten T3, and Samsung
- Added support for 16-bit images
- Added layers support
- Added lots of more brushes
- Added SD/MMC/CF card support
- Added support for nearly-unlimited image sizes
- Added standard TICL button mapping
- Added standard TICL file list
- Added standard TICL file manager
- Added standard TICL pen-free navigation
- Added color thumbnail images
- Added slideshow mode
- Added five magnification levels
- Added support for drawing when magnified
- Added multiple levels of Undo
- Added blur effect
- Added completely new TealPoint Image Manager

Appendix I – Contact Info

TealPaint by TealPoint Software
©1999-2006 All Rights Reserved.

TealPoint Software
454 Las Gallinas Ave #318
San Rafael, CA 94903-3618

Please visit us at www.tealpoint.com, or email us at support@tealpoint.com.

We look forward to hearing from you.

Appendix J – Registering

Registering allows you to use the program past the 30 day expiration period and turns off registration reminders.

Currently, you may register by snail mail or online with a credit card and a secured server from the store where you downloaded the software. For the first option, send the following information on a sheet of paper separate from your payment.

- Product Name
- E-Mail Address
- HotSync User ID (Pilot Name Required for Passkey generation. It can be found on the main screen of the HotSync application on the Pilot as "Welcome _____" or in the corner on a PalmIII or higher)
- Check (drawn off a US Bank) or Money Order for (\$19.95 US). No international checks or money orders please.

Appendix K – Legal Notice

We at TealPoint Software are committed to providing quality, easy-to-use software. However, this product is provided without warranty and the user accepts full responsibility for any damages, consequential or otherwise, resulting from its use.

This archive is freely redistributable, provided it is made available only in its complete, unmodified form with no additional files and for noncommercial purposes only. Any other use must have prior written authorization from TealPoint Software.

Unauthorized commercial use includes, but is not limited to:

- A product for sale.
- Accompanying a product for sale.
- Accompanying a magazine, book or other publication for sale.
- Distribution with "Media", "Copying" or other incidental costs.
- Available for download with access or download fees.

This program may be used on a trial basis for 30 days. The program will continue to function afterwards. However, if after this time you wish to continue using it, please register with us for the nominal fee listed in the program.

Thank you.

CUSTOMER LICENSE AGREEMENT

YOU ARE ABOUT TO DOWNLOAD, INSTALL, OPEN OR USE PROPRIETARY SOFTWARE OWNED BY TEALPOINT SOFTWARE, INC. CAREFULLY READ THE TERMS AND CONDITIONS OF THIS END USER LICENSE BEFORE DOING SO, AND CLICK BELOW THAT YOU ACCEPT THESE TERMS.

1. License. You are authorized to use the Software Product owned and developed by TealPoint Software, Inc. on a single hand-held computing device on a trial basis for thirty (30) days. If after 30 days you wish to continue using it, you are required to register with TealPoint and pay the specified fee. This license is not exclusive and may not be transferred. You may make one copy of the Software for back-up and archival purposes only.
2. Ownership. You acknowledge that the Software Product is the exclusive property of TealPoint Software, Inc, which owns all copyright, trade secret, patent and other proprietary rights in the Software Product.
3. Restrictions. You may NOT: (a) decompile or reverse engineer the Software Product; (b) copy (except as provided in 1 above) sell, distribute or commercially exploit the Software product; or (c) transfer, assign or sublicense this license.
4. Disclaimer of Warranty and Liability. TEALPOINT MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS OR FUNCTIONING OF THE LICENSED SOFTWARE, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH TEALPOINT DISCLAIMS. ALL LIABILITY IS DISCLAIMED AND TEALPOINT ASSUMES NO RESPONSIBILITY OR LIABILITY FOR LOSS OR DAMAGES OF ANY KIND, DIRECT OR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR SPECIAL, ARISING OUT OF YOUR USE OF THE LICENSED SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
5. Termination. You may terminate this Agreement at any time by destroying your copy(ies) of the Software Product. The Agreement will also terminate if you do not comply with any of its terms and conditions, at which time you are required to destroy your copy(ies) of the Software Product and cease all use.
6. Applicable Law. This Agreement is governed by the laws of the State of California.