ASL Painter Overview

ASL Painter is a 256 Color replacement for the PaintBrush Applet that comes standard with Windows 3.1. Not only are the standard Paint tools that you expect supported, ASL Painter adds many editing tools, art style tools, and special image editing effects.

TOPICS:

Tools Palette #1

Scissors: used to cut a rectangular area. The contents of this area can be CUT (removed), COPIED, (sent to the Windows Clipboard) , or FLIPPED Horizontally or Vertically. After choosing the area with the scissors, the EDIT menu is the only menu choice that can be made.

Dropper: used to "pick up" a color. The LEFT mouse button will "read" the color under the cursor and place this color in the COLORS window TOP LEFT position. The RIGHT mouse button will place a color into the TOP RIGHT position.

Paint Bucket: used to fill any area (regular or irregular with color. A variety of Fill Styles are supported. The color seen at the point of placement (i.e. where you click at to activate) will be replaced up until a border of ANY other color is encountered.

Pencil: used for drawing freehand.

Text icon is used if you wish to put lettering on your picture. You can select any valid Windows font in the FONTS menu, and you can also assign attributes such as **Bold**, *Italic*, <u>Underline</u>, and even a shadow. Refer to Working With Text.

Eraser: used to freehand erase. It is similar to using the Pencil (freehand drawing tool) except that the erased area is always square.

Spray Paint: used to fill in color much like it's real life counterpart. The Spray Can has a rectangular spray pattern, which along with the dot size will vary with Line Width.

Line: used to draw a straight line.

Circle: used to draw a perfect circle. It is centered on the point that is first clicked.

Triangle used to draw a triangular shape. There are two other triangle style choices in the #2 Tool Palette.

3d Box: used to draw a 3D box; a choice of styles allows for depth.

Rounded Rectangle: used to draw a rectangular shape with rounded edges. The rounding of the edges is a function of the size.

Ellipse: same as the circle tool in Windows PaintBrush; it is drawn inside an imaginary   rectangle.

Rectangle: used to draw a rectangular shape.

Roller: used to act as a paint roller. See <u>Texture Tools</u>

Textured Spray Paint: used like the spray can with multiple colors. See <u>Texture Tools</u>
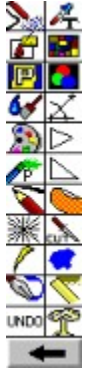
Pixel Smear: used to modify a picture by color smearing. See <u>Smear Tools</u>.

Textured Paint Brush: can act as a watercolor or acrylic brush. See <u>Texture Tools</u>

Pixellation Smear: used to modify a picture by color smearing. See <u>Smear Tools</u>

Line Spread Smear: used to modify a picture by color smearing. See <u>Smear Tools</u>.

Tools Palette #2

The #2Tools Palette icons are explained from top left, top right and so on to the bottom.

Air Brush: used for fine color spraying. This is similar to **Spray Paint** but the pattern is circular and the dot spread (rather than dot size) changes depending on the **Size** setting.

Threshold Dropper: this is similar in concept to a normal dropper but is used to read the luminosity (i.e. threshold value) of the color it picks up.

Bordered Paint Bucket: this paints like a regular Paint Bucket except that the color fill will stop ONLY at BLACK borders.

Area Pixellation: used to select a specific rectangular area for pixellation. The pixellation size is that selected in the OPTIONS menu. This tool is best used to select specific areas (such as a face in a photo of many people) for pixellation.

Area Posterization: used to select a specific rectangular area for posterising.

Area Negative: used to select a specific rectangular area to invert the colors in.

Water Brush (Textured Air Brush): used to simulate the effect of painting dry watercolor on a canvas surface. See Texture Tools

Angle Line: used to draw a line with a known offset angle. Can be used to create realistic quickie drawings (such as a quick representation of a 4 degree angle wheelchair ramp) or to measure angles in photographs.

Paint: dry wide paintbrush simulation.

Triangle #2: used to draw a triangle with a sideways apex.

Pastel Crayon: used to simulate the look of a drying pastel crayon. See Texture Tools

Triangle #3: used to draw a right triangle.

Charcoal Pencil: used to simulate a soft charcoal pencil. The faster you draw, the thicker the line gets (up until it reaches a maximum dictated by the size chosen.) This works like it does in real life, where you are typically bearing down at a different angle depending on the speed.

Finger Smudge: used to modify a picture by color smearing. See Smear Tools.

Radial Lines: used to draw a series of lines from the first click point. This is especially useful to draw simulated sunbursts and explosions.

Knife: used to "lasso" and cut out a non-rectangular area.

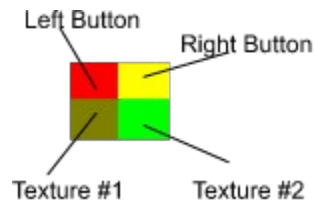**Quill Pen:** simulation of an old quill pen. The faster you draw, the thinner the line will get.

Irregular Shape Tool: this is used to draw ANY irregular shape and fill it in with the currently selected color and fill style.

Calligraphy Pen: used to simulate a calligraphy pen with an angled nib.

Chalk: used to simulate chalk, dust included. Only one size.

Texture Tools

The Texture tools all use a primary color that depends on the mouse button being pressed. Refer to the diagram showing the COLORS window.

In a normal drawing mode (i.e. pencil, line, etc.) the color used is dependent on the mouse button pressed when drawing. Only the color picked is used.

In drawing with any of the Textured tools, Texture #1 and Texture #2 colors are also applied. The amount and degree of color applied varies from tool to tool. By picking the colors yourself, you have the ability to either create a realistic looking texture or a wild effect... for instance, the **Paint Roller** tool has just enough texture applied to it to simulate a slight unevenness of spread just like a real paint roller. This effect can be very subtle depending on the color mix. On the other hand, a *Star Field* can easily be created by choosing BLACK as the primary color and WHITE and YELLOW as the texture colors. Rather than have a subtle texturing effect, you're now applying a base color (black) and dropping 1 pixel sized dots that have the effect of looking like far off stars. Although there are myriad ways to achieve a simulated star field, this method is simple and shows a little about how the texture tools work.

Textured tool list (with some usage suggestions):

Roller: draws a block of color with a slight dot texture. Used to create color shadowing for walls and other surfaces. Also good for star fields.
Spray Paint: draws dots in a rectangular pattern. Dot size depends on the line width chosen. Larger dot sizes allow for interesting effects such as "instant" trees or "instant" sky.
Paint Brush: draws a series of continuous lines. Smaller brush sizes and a good color selection are good for drawing wood (like tree trunks, etc.). The two largest sizes use a different drawing algorithm. This algorithm randomizes the color pattern, and the drawing effect changes on how fast the drawing is made. Faster movement creates a look like Crystals whereas very slow movement is a great way to create a look like *marble*.
Water Brush: this is similar to the Air Brush but draws dots in such a way as to mimic the texture of a canvas. The best description for the final effect is that of a very dry brush.
Pastel Crayon: a combination tool that creates a line (like a freehand Pencil) with "dust."

Using ASL Painter!

ASL Painter! is divided into 5 major areas:

1. The program menu.
2. The **colors** window: this window is evenly divided into 4 squares. Each has a color in it. Clicking on any color square will pop up the full 256 color palette; choosing a color will change the color of the square. See Texture Tools for a description of this window.
3. The **toolbox**: allows you to pick the drawing tool to use. See Tools Palette #1 or Tools Palette #2

4. The **modifier** window: allows you to specify the primary attribute for the currently selected tool, such as line width or fill style.

This is the modifier for most drawing tools. The top section above the red line allows you to choose a line width while the bottom section allows you to choose a Fill Style. The current choice will be pointed to by a red triangular pointer.

Choosing a drawing tool from the toolbox will sometimes change the modifier window. Many of the drawing tools only need to specify a line size, others (like the paint roller tool) will allow you to specify roller size and direction.

5. The main **drawing area**.: your painting or drawing goes here.

In short, to make any drawing on the drawing surface, you need to pick a color, a drawing tool, and any attribute specific to the drawing tool. You are free to change any of the above during the drawing process at any time.

In addition, note the X/Y position labels between the menu and the drawing area. This will allow you to place lines, etc. precisely since these will reflect the current position of the mouse cursor over the drawing area. These also work in Zoom Editing mode.

Smear Tools

The Smear tools are used to modify a drawn area. As a rule, they tend to blend or separate colors.

Smearing tool list (with some usage suggestions):

Pixel Smear: this is used to "swap" pixels in the area affected. It has an effect similar to that of introducing noise. One of the effects you can create with this is vaporization, such as when something is hit with high energy and dissolves but doesn't explode.
Line Spread Smear: works by moving odd and even rows of pixels in opposite directions. This is a good way to create cloud patterns as well as create special effects that simply cannot be done as easily any other way, such as making a simulated TV picture effect complete with scan lines.
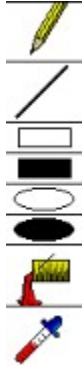**Pixellation Smear:** used to block up color with a 2x2 pixellated area. This is a good tool for removing photo scratches.
Finger Smudge Smear: used to simulate the effect of touching wet paint. Especially effective for any of the Texture Tools , this will replace lighter pixels with darker ones. The direction of the smear is dependent on the direction the mouse is moved.

Zoom Editing

Painter! offers the ability to edit in a Zoomed mode. This allows you greater flexibility in editing, such as making minute color changes to remove photo scratches or to correct a small 2 pixel mistake that the regular drawing mode would make into a maddening affair.

In Zoom mode, the main picture area is replaced with a 400x400 pixel zoomed copy of the area that is shown in an 80x80 floating window. This floating window can be placed anywhere you feel most comfortable with. To change the zoomed view, click the scroll bars in the floating window to scroll through the picture.

The tools used in Zoom editing are very similar to the simpler tools that are used in the main drawing area...

Pencil: freehand pixel setting with each mouse click.
Line: draws straight lines.
Open Box: draws an unfilled rectangle.
Filled Box: draws a filled rectangle. The Fill Style is SOLID and is in the same color that the border is drawn in.
Open Ellipse: draws an open circular shape.
Filled Ellipse: same relationship to Ellipse as the Filled Box is to the Open Box.
Paint Bucket: Fills an area with solid color.
Dropper: used to "pick up" colors and assign them to the mouse buttons.

While you are editing note that the X/Y position shown above the zoomed picture is in coordinates relative to THE MAIN PICTURE, not the current viewport. Also note that any changes are reflected in the actual size picture shown in the floating window.

After you are finished editing in the Zoom mode, choose EDIT|UNZOOM. (This will be the only menu choice you can make.)

The Painter! Menu

FILE:

New: Create a new picture. You will be asked to specify the dimensions in pixels (if you're uncomfortable with pixels, a default dimension is given for you.) You are then asked which of the palettes you wish to use. Painter comes with a set of palettes you can use, or you can use any palette that you have saved from the clipboard. See. How To Use Custom Color Palettes

Open: Opens an existing picture to edit. The FileOpen dialog lists the available formats in the lower left dropdown box.

Save: Saves an opened picture after you have edited it.

Save As: This will allow you to specify a NAME and DIRECTORY when saving any picture. If you start a New picture, it will not be named, you will need to use this to name it and save it.

Exit: Quit Painter!

EDIT:

The Edit functions are used after the Scissors tool has been used to select a rectangular area.

Copy: This will copy the selected area to the Windows clipboard.

Cut: This will remove the selected area from the picture and copy it to the Windows clipboard.

Paste: This will be available if there is a valid picture in the windows clipboard. Once you select Paste, the clipboard contents are placed on screen for you. The mouse cursor will change to a 4 Way (Move) Arrow when you are over the pasted picture. You can then click the picture and drag it to wherever you wish to place it. Releasing the mouse button will drop it into place

Flip Horizontal: This will flip the selected area horizontally. (Back and Forth.)

Flip Vertical: This will flip the selected area vertically. (Up and Down.)

Zoom: Used to expand the picture for high precision editing. See Zoom Editing.

FONT:

Used only by the Text tool.

Bold: A toggle item. When checked, any text printed will be boldfaced.

Italic: A toggle Item. When checked, any text printed will be italicized.

Underline: A toggle Item. When checked, any text printed will be underlined.

Shadow: A toggle Item. When checked, any text printed will be shadowed.

Select Shadow Effects: This pops up a dialog window that you can use to specify the depth and angle of any text shadowing.

Select Font: This pops up a standard Font dialog which you can use to specify the font to use and the

size of the font.

EFFECTS:

Be sure to read <u>Processing Times</u>.

Art Effects:

Pointillize: Pointillizing modifies an entire picture such that the net effect is that of a painting. Georges Seurat was one of the early pioneers of a technique of painting pictures using thousands of dots rather than using traditional brush strokes. This effect mimics this style.

Posterize: Posterizing puts a black outline around blocks of color much like you will find in poster art. This technique is useful when there are large contiguous blocks of color.

Misc. Effects:

Noise: This effect samples the colors in the picture and sets random points to these colors. The net effect is to create a picture that can look like a TV frame complete with interference.

Negative: This inverts the colors in the picture with their complement values IN THE CURRENTLY USED PALETTE. The net effect is similar to a photo negative.

Pixellation: This effect replaces your picture with large blocks (you specify the size of the block in the OPTIONS menu.) The colors of the blocks are taken from the picture itself. This effect is used to reduce detail.

Threshold Manipulation:

Thresholds are based on INTENSITY of color. In general, all colors in a palette have what is called "Luminosity"; this value is a gauge of brightness.

Edge Detect: This routine locates threshold crossings of adjacent pixels and highlights the crossing. It is generally used for precisely locating edges of objects for measurement of distance.

False Color: This effect assigns user-defined colors to ranges of luminosity. This is generally used with pictures in that the information content of the original picture isn't immediately discernible. Satellite photos showing plant growth are taken by monochromatic infrared cameras and are an excellent example of false color usage. Another use is in analysis of photographs for "doctoring." By false coloring a digitized photo, subtle changes that are practically invisible to the naked eye are enhanced. As art, false color offers a variety of interesting effects.

Turn All Below Threshold Black: This is a quick and easy way to visibly remove or negate non-essential information in a picture. Some pictures of celestial objects that are available use a color palette that isn't a real black background, for instance, and for some applications it may be necessary to "deepen" the black.

Turn All Below Threshold White: Another form of removal of non essential image data.

Black and White Processing:

This processing is primarily used for preparation of images for computer animation as well as for art effects.

Greyscale: This is mostly an art effect although it can also be used for prepping images for monochromatic printing. The usefulness of print preparation will depend on the amount of greys in the palette being used. With a narrow range of grey colors it is quite limited. Palettes with a lot of grey colors

will allow transforming of the image to a monochrome image with decent fidelity; sometimes this will enhance the printability of images.

Reverse Greyscale: As above, a palette with a wide range of greys (18 - 32 values) can process an image with reasonable fidelity. A reverse greyscaling creates a Black and White negative.

Turn All White Black: This is used for preparing animation routines where you need to create a maskable area. Black and White are most often used to create the masks (areas that don't get transferred) with.

Turn All Color Black: The complement to the above effect.

Turn all Black White: Used as a reversal of "Turn All White Black" so that previously finished images can later be easily re-edited.

OPTIONS:

Set Edge Detection Threshold: This option pops up a dialog window that allows you to set the color luminosity threshold. The dialog contains a copy of the color palette. Clicking any color on the palette shows the luminosity of the selected color. Additionally you can set the luminosity using the scrollbar. Use this to get an idea of the color luminosity values in a given palette.

Set False Color Ranges: This option pops up a dialog window that allows you to specify the luminosity ranges and what colors are assigned to these. Refer to **Effects|False Color** above.

Pixellation Size: This option allows you to specify the pixellation block size when pixellating. Your choices are 3x3, 4x4, or 5x5.

HELP:

Topics: Starts up this on-line Help.

About: Who we are, revision numbers.

How To Use Custom Color Palettes

Often enough you will find that a palette that is being used by a particular picture you have viewed or edited is a good candidate for creating new pictures that use this same palette. The following outlines a way to copy this palette for later use.

Copying and Saving a Palette:

1. Load in the picture that you wish to get a palette from.
2. Using the Scissors Tool in <u>Tools Palette #1</u>, select an area of this picture. Select EDIT|COPY to place this selection on the clipboard.
3. DoubleClick the clipboard icon in Program Manager. Save the clipboard contents (it will be a bitmap and a palette) as a *.CLP file in your Painter! directory.

Using this Palette Later:

1. DoubleCLick the clipboard icon in Program Manager and OPEN a stored *.CLP file.
2. In Painter! select FILE|NEW and specify the picture size.
3. A popup menu will appear; select "Custom Palette" at the bottom of the list.

Processing Times

Some of the Painter! functions can take time, depending on the action being performed. In particular, any operation that must look at every pixel and make a decision will be affected. This is limited to some of the special effects; **Drawing Operations** take place in real time.

Operations such as **False Color** and **Greyscale** are further slowed by the need to take every single pixel's data and then find an appropriate replacement value for it. This requires the use of a LUT (Look Up Table) to determine the replacement value. (Setting up the false color ranges is a direct control of an LUT.)

The default picture size is roughly 574 x426. A false color operation on a bitmap of this size requires reading and replacing roughly a QUARTER MILLION pixels, which translates to roughly ONE MILLION bytes(a Megabyte) to process. When this processing is taking place, Painter! is also taking time out at the end of each row (or scanline) to allow Windows to perform any other tasks it is doing.

Other operations such as **Pixellation** or **Pointillisation** use a different algorithm (i.e. not every pixel is examined and replaced) and consequently require less time.

As a rule, it takes about 2 minutes or so to process **False Color** on a 640x480 picture using a 486DX/33 and light graphics acceleration.