CarveWright™ WOODWORKING SYSTEM
TiPS & TRiCKS
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The CarveWright Pattern Editor

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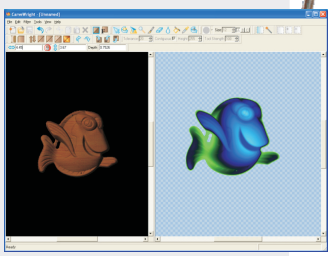
The CarveWright 3D Scanning Probe



The CarveWright Pattern Editor

In case some of you may not be familiar with the Pattern Editor software - it's the software that is primarily used to convert "raw" probe scans (called **mpw** artwork files) into patterns (called **ptn** files) that you ultimately import into your Designer Pattern Library. Additionally, the software allows you to open graphic files, perform minor editing in a split-screen Standard View and "3D heightmap View", then re-save them as artwork files (mpw), pattern files (ptn), or even as "png" graphic files.

The Pattern Editor software is included when you purchase the CarveWright 3D Scanning Probe. The software is also available apart from the scanning probe as a separate purchase. However, you may want to just go ahead and purchase the Scanning Probe since you'll automatically receive the Pattern Editor software and activation as part of the package. Besides, as a Scanning Probe owner, you'll be able to easily create an unlimited supply of scanned dimensional relief patterns to add to your collection! It's a great value.

The Pattern Editor software is continually maturing as its existing features are improved and new feature additions are considered and tested. At the time of this writing, there is not a Help File available within the software yet. In the meantime, this issue will cover the main features and functions of the Pattern Editor.

Please visit the manufacturer's website for more information about the CarveWright machines and see the new Pattern Depot at: www.carvewright.com

For Additional Patterns you can add to your Designer software library, please visit: www.carvebuddy.com

For More Information About the Scanning Probe
Please visit:
http://www.carvewright.com/cms/probe

For Information About Purchasing the Pattern Editor Separately
Please Visit:
http://www.carvewright.com/store/
(then click on "Software")

Starting/Opening the Pattern Editor

The Pattern Editor will open when you double-click (or use right-click->Open) on any pattern file (ptn) you created yourself, or of course, when you download a scan from your memory card to your computer via the File Menu in the Designer software (**File->Download Scan**).

You can also start/open the Editor when you click **File->Open** in Designer and select a file type that the Editor uses (mpw, ptn). The Pattern Editor is actually an integrated part of your Designer software, so if the pattern Editor is open, so too will be your Designer software. Conversely, the Designer software can be opened and used without the Pattern Editor being open. *(Perhaps I have stated the obvious here, since I'm sure you realize that not everyone will own or use the Pattern Editor software.)*

NOTE: For much of this article, I'll often abbreviate the term "Pattern Editor" as simply "**PE**".

The CarveWright Pattern Editor

The Main Menus

I'm sure you already know how to navigate the basic **File** and **Edit Menu** tasks such as New, Open, Save, Save As, Undo, Redo, etc. That functionality is common to nearly all software programs so I won't waste too much of your time on particularly obvious and familiar operations so I'll mainly comment on PE's more specific tools and unique functions (fig. 1 - 16). One reference to a "basic item" I need to mention specifically regarding the PE software is that the Paste function is currently non-operational at the time of this writing and will have no effect within PE if you try to use it. **NOTE:** Be aware that you <u>can</u> copy (or cut) a selection in PE (the copy/cut copy is held in the Clipboard) and you can paste the copy into a different graphic application if you desire.

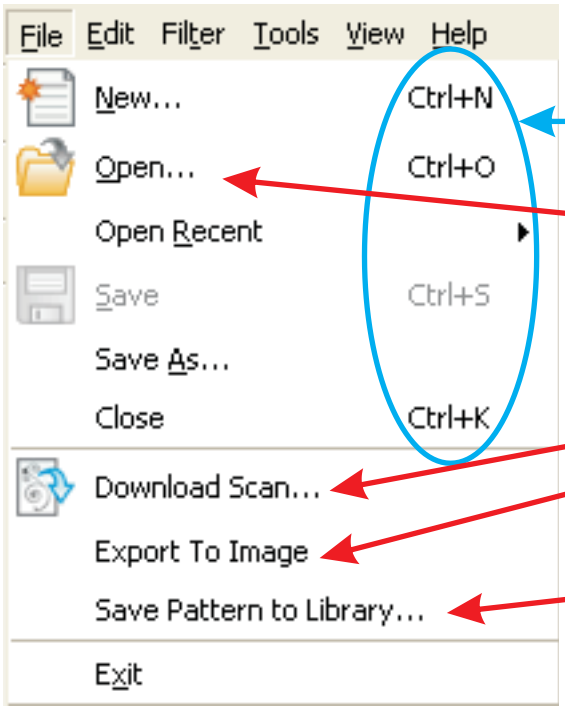


fig. 1

The PE File Menu

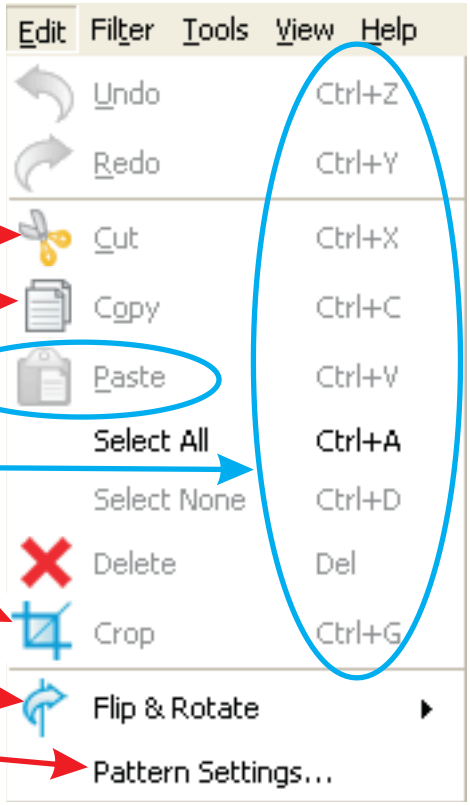
This column lists the keyboard shortcuts you can use instead of opening the menu and clicking these options with your mouse.

You can open your own patterns (ptn), a raw scan (mpw) or open any of the following graphic file types: bmp, jpg, jpeg, png, mng, gif, xpm (Note: an mpw file is also referred to as "Artwork" but I'll use the term "artwork" for any open file being edited)

Transfers a scan from your memory card to the PE.

Allows you to save your file to the png graphic format

Saves your file as a Pattern (ptn) file in your Designer Library



Used after you make a selection, this willl remove anything <u>inside</u> of the selection (it also copies the selection to the Clipboard for pasting into another graphic application if you so desire)

Copies a selection to the Clipboard

Paste is non-functional within the PE at this time

List of the keyboard shortcuts for the Edit Menu

Used after you make a selection, this will remove anything <u>outside</u> of the selection. **NOTE:** Always crop your artwork after editing, before saving it to a pattern.

Allows you to Flip or Rotate the pattern, graphic or artwork you are editing

Allows you to assign a name and write a description for the pattern, graphic or artwork you are editing

fig. 2

The PE Edit Menu

The CarveWright Pattern Editor

The Main Menus (cont.)

The **Filter Menu** (fig. 3) contains several features for adding final touches to your overall artwork before saving the result as a pattern. Filters will affect either the entire artwork or you can select an area and apply the filter exclusively to only selected areas. These filters are duplicates of the docker bar icons you see in the main interface window but this menu lists the keyboard shortcuts, as well.

Inverts the shades of the artwork, which reverses the heightmap depths.

This brings the outside edges of a scan or graphic down to the zero plane (improves rough, irregular, or incomplete edges). It doesn't actually "round over" the edges as the name might imply.

Raise/Lower functions as a type of brightness/contrast adjustment. As the image becomes darker, the heightmap becomes lower overall. As the image is adjusted brighter, the heightmap becomes taller overall.

The Smooth filter tones down differences in adjacent pixels, resulting in only a slight loss of detail while smoothing the overall image or selected area. What it does is smooth the smallest details while attempting to maintain the sharpness of larger edges—effectively cleaning up the image. Don't overuse - a value of 2 or 3 is usually enough.

The Blur filter softens an image overall, including details. Blur works by averaging the shade of pixels next to the hard edges of defined lines and shaded areas in an image and has the effect of "blending" details so that they are less obvious. Overuse of blur will remove too much detail resulting in kind of an undesireable "melted chocolate effect". Stay at a low value of 2 or 3 if possible.

De-noise filtering has very little effect on scanned items (mpw files) you are editing. However, it can certainly help clean up imported graphics (such as jpeg files). Artifacts (noise) that are present in some graphics can be significantly reduced by using the De-Noise Filter.

The Quantize filter reduces the number of shades in your artwork. This can be extremely useful for cleaning up and defining raised areas in simple 3 or 4-color logo graphics that you wish to create a neat pattern from.

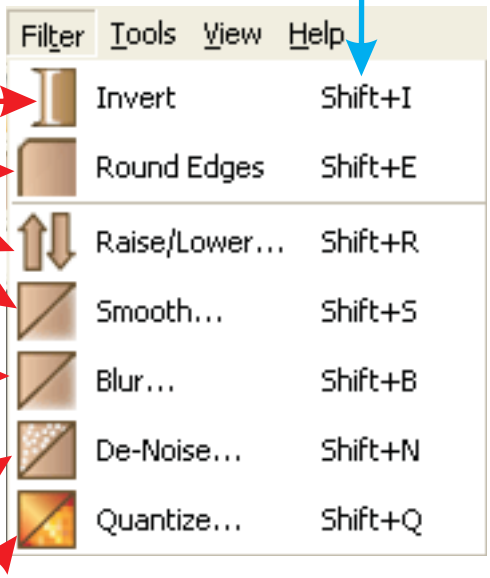


fig. 3 **The PE Filter Menu**

The Main Menus (cont.)

The **Tools Menu** has some of the same icons you'll see on the main PE interface. You'll notice that each of the tools listed have convenient keyboard shortcuts that you can use instead of clicking on the menu or an icon. (fig. 4)

The standard selection arrow

This is used to "paint" your pixels when editing. The brush can be resized via the Brush docking tool bar.

This is used to erase undesired areas. The erase tool also functions as an "Undo" tool. Hold down the Ctrl key on your computer keyboard and move the eraser over any area you have previously edited while holding down the left mouse button. It will undo all edits that the eraser passes over, restoring those areas to their original state.

The Blur Tool "brush" softens artwork by averaging the shade of adjacent pixels. Hold the left mouse button down while moving the "brush" over areas you want blurred.

Fills a selection with the color or shade you have chosen. Aim with the "paint pour" end.

The Dropper is used to select a shade or color value by left-clicking the mouse when over the desired shade. The shade is displayed as a numerical height value in the main interface Height box display. Numbers range from 0 (lowest height) to 255 (tallest height).

Allows you to rotate your artwork in the edit window by click/dragging a directional guideline to rotate the art into any position you desire. Useful for straightening skewed artwork/scans before saving as patterns.

Hold the left mouse button down and drag to draw a rectangle-shaped selection.

When clicked over your artwork, the Magic Wand will select an area of similarly shaded connected (contiguous), or non-connected pixels. Sensitivity tolerance is adjustable via the Input toolbar.

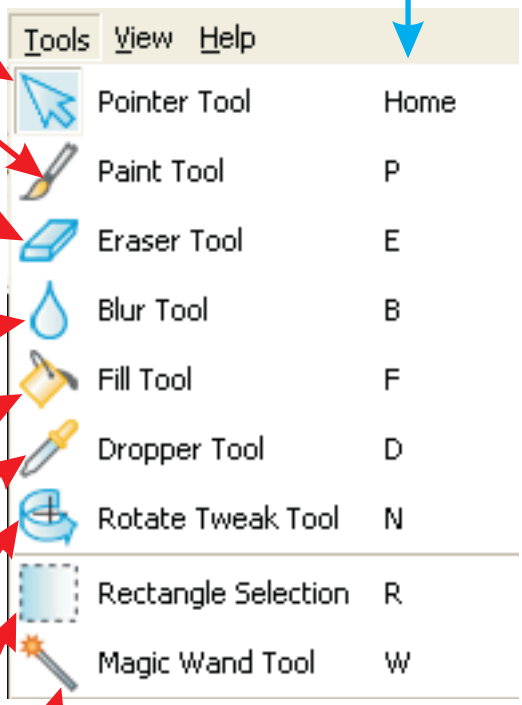


fig. 4 **The PE Tools Menu**

The Main Menus (cont.)

The **View Menu** (fig. 5) has various tools for viewing your artwork in the left viewing pane of the PE interface. One new tool which applies only to the right-side viewing pane (the editing side) is the 2D Colorization option. This became available starting with the release of the 1.30 version of the software. It allows you to toggle between a conventional greyscale heightmap view and a colorized heightmap view of your artwork.

Click on the far right arrow to turn on or off visibility of various docking toolbars.

Clicking the far right arrow gives you 8 options for lighting direction in relation to the artwork.

Clicking this icon toggles between a perspective view and a "straight-on" view.

Clicking this icon toggles on/off the display of the board texture/grain. **Recommended:** Turn the texture "off" when editing.

These allow you to move the artwork left/right, up/down (pan), rotate in 3D space, and zoom in and out (magnify). **NOTE:** The keyboard shortcuts for each are in parenthesis. It is not really necessary to ever click these icons - it is faster and easier to just use the keyboard shortcuts along with your mouse.

Restores the view to the default Front View.

Tilts the artwork to view it at a preset angle for a quick visual rendition of height, width, and depth relationship of your artwork object.

Click this icon to display an options menu for colorization or no colorization of the right-side pane heightmap view. (fig. 6)

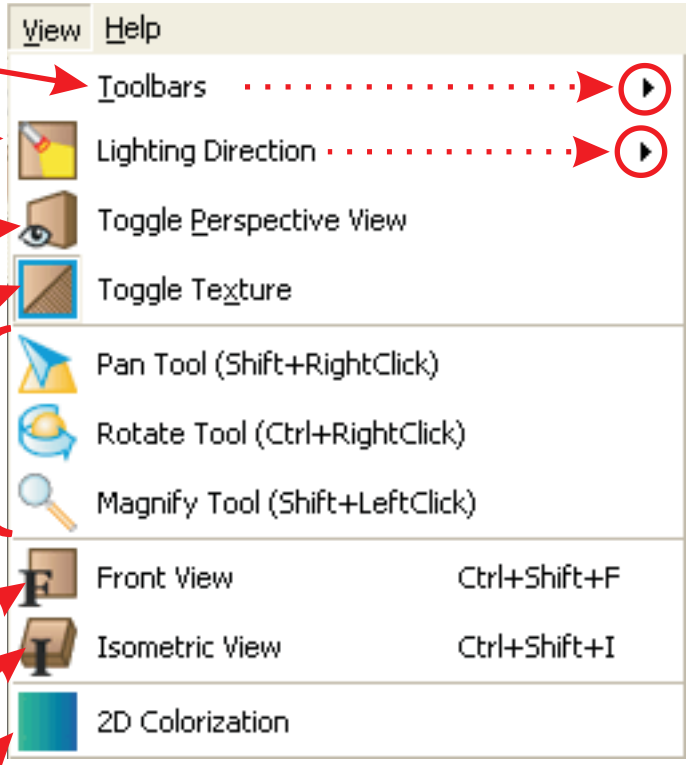


fig. 5 **The PE View Menu**

A checkmark in this box turns off the colorization. Click inside the box again to remove the checkmark and turn on colorization. Left-click and hold your mouse button and move the cursor over the dial to adjust the colorization.

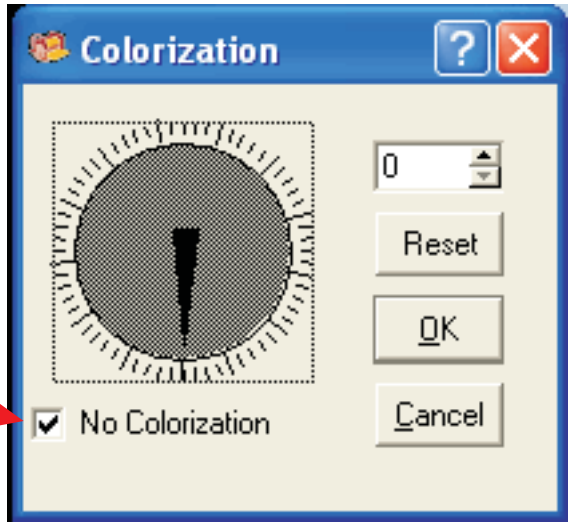


fig. 6 **The Colorization Menu**

The Main Menus (cont.)

The **Help Menu** (fig. 7) has a non-functional "Help Contents" link at the time of this writing. It does have an "About" menu item which will display the version of the Pattern Editor you currently have installed on your system.

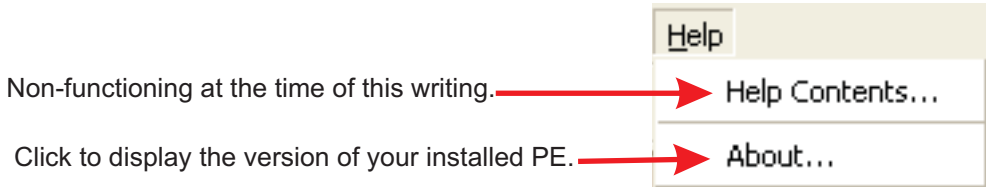
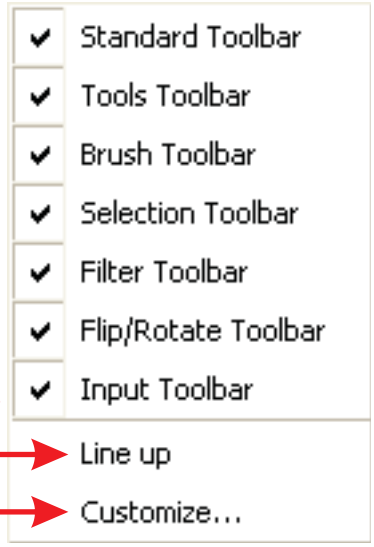


fig. 7 The PE Help Menu

The Docker Toolbars

The Docker Toolbars **(View->Toolbars)**
There are 8 Docker Toolbars - 7 are listed here. Clicking on the checkmarks or name toggles the toolbars on and off.
Normally, you will keep them all "on".
The toolbar **not** listed is the "Adjust Size Toolbar".



If you have moved the toolbars, this lines them up again automatically.

Allows you to add/remove items that appear on each toolbar. (fig. 8)

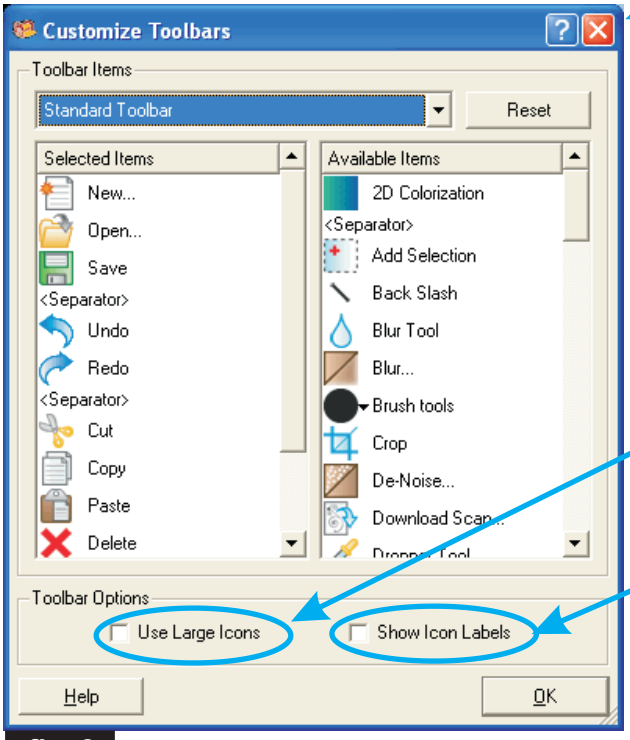


fig. 8 CustomizeToolbar Menu

Click this option for Large icons to be displayed.

Click this option to display all icons' names. Very handy when first starting to learn the program. **NOTE:** Alternatively, you can simply "hover" your mouse cursor over any toolbar icon and a "tool tip" icon label will appear within a couple seconds, without using the "Show Icon Labels" option.

The Docker Toolbars (cont.)

Here are all the toolbars with their functions labeled and described. (fig. 9)

fig. 9

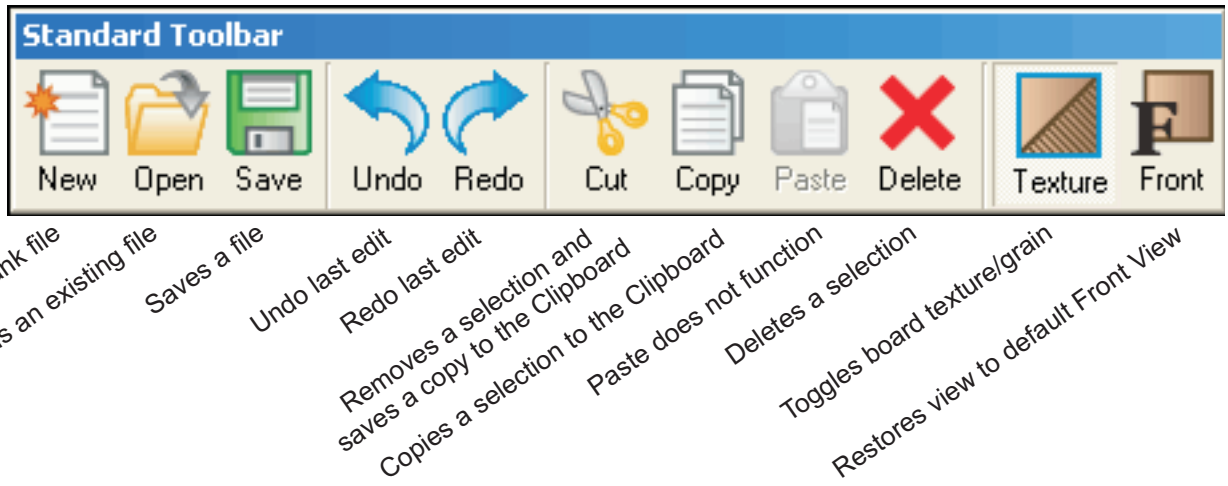


fig. 10

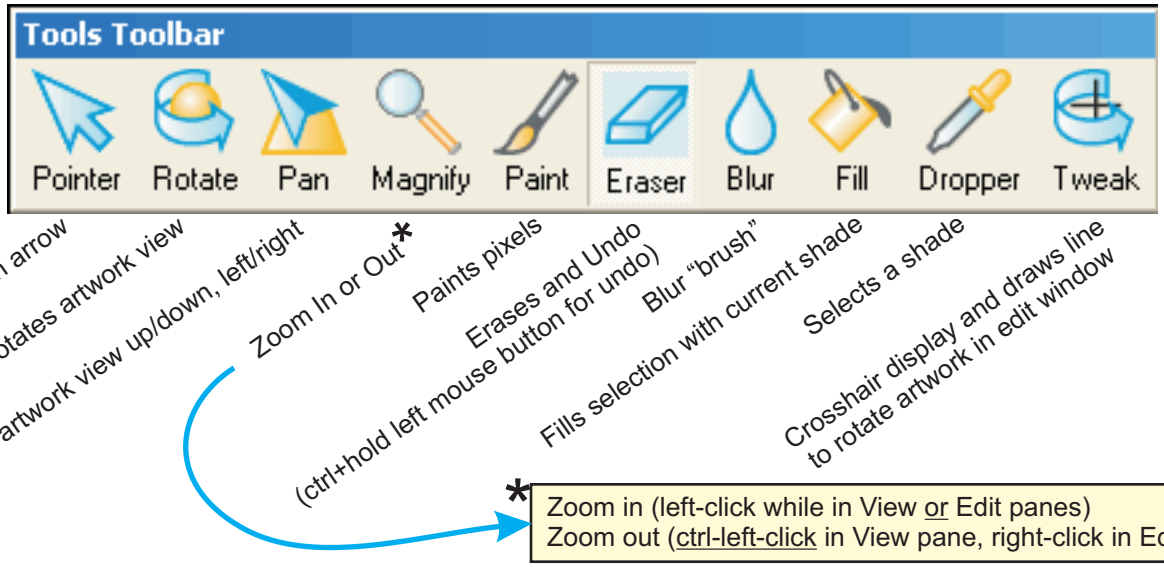
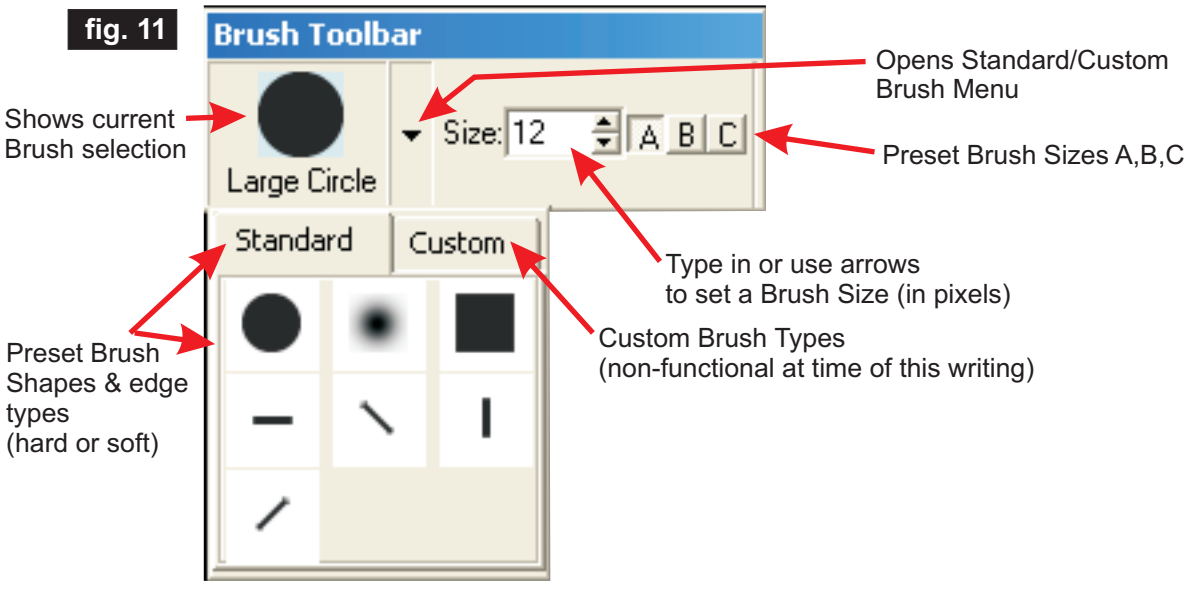


fig. 11



The Docker Toolbars (cont.)

fig. 12

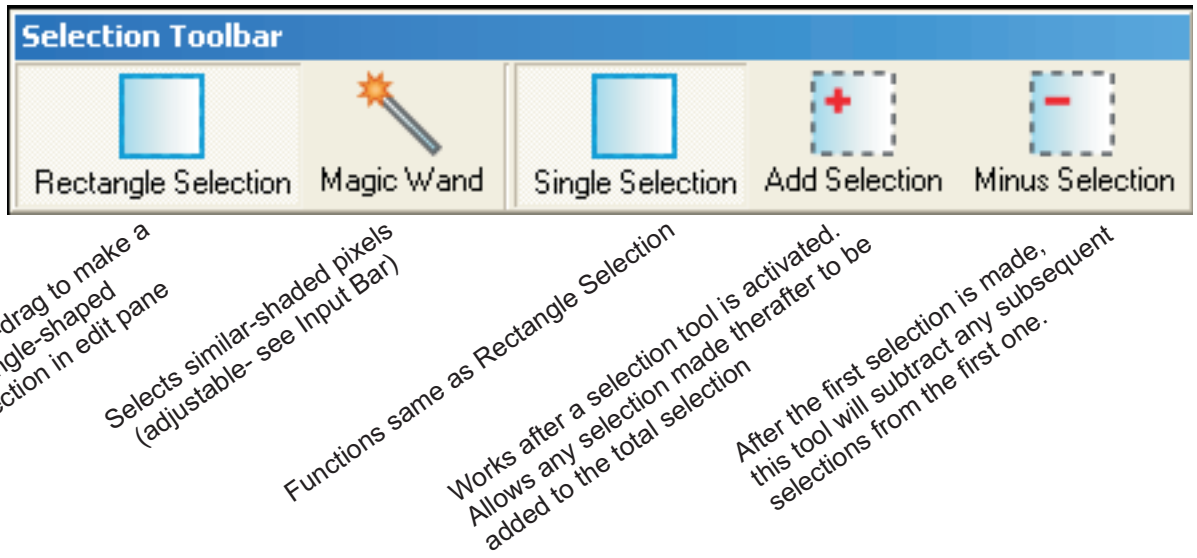


fig. 13

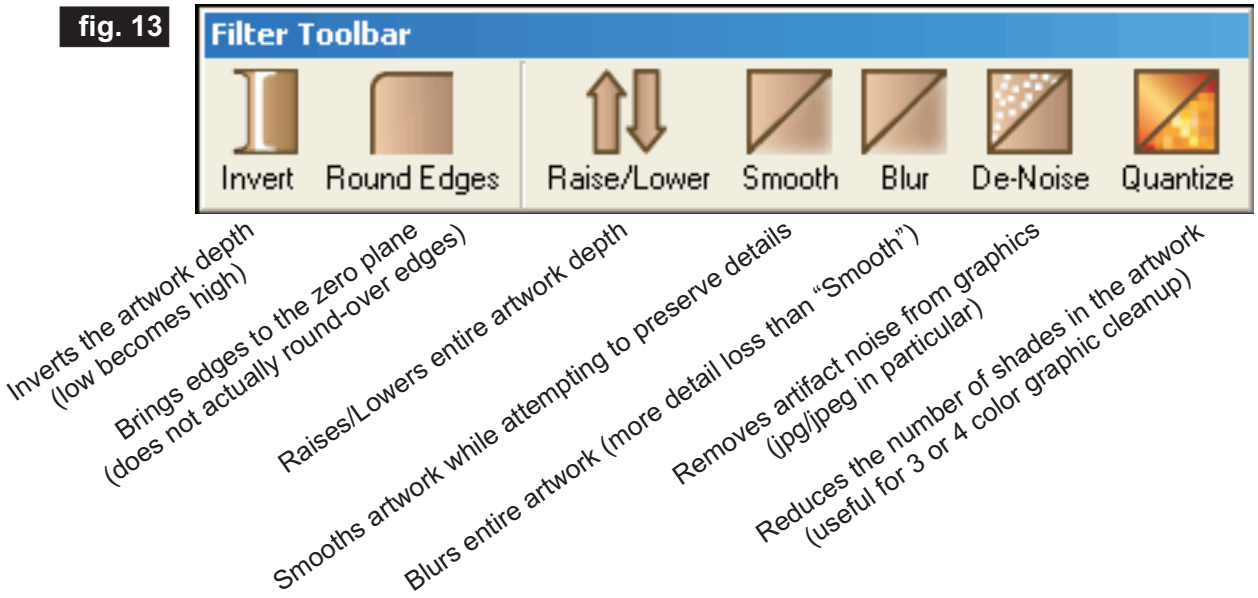
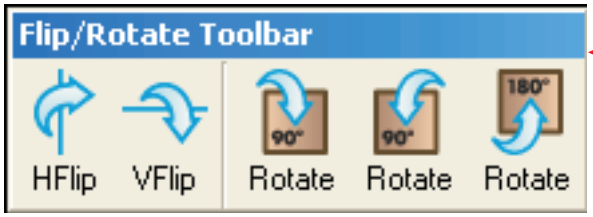


fig. 14



These functions are self-explanatory.
NOTE: After applying any of these functions, the pattern will be saved in the orientation you selected from this toolbar.

The Docker Toolbars (cont.)

fig. 15

Type in or use the arrows to specify the amount of shade similarity for the Fill Tool or Magic Wand Tool to affect.

Toggles between whether connected pixels (contiguous) or all similar shade pixels are affected when using the Fill or Magic Wand Tools

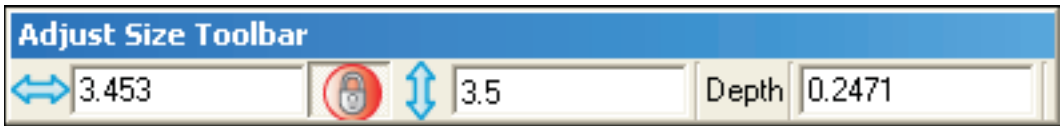
A value will automatically be placed here when the Dropper Tool is used to select a shade. You may also manually enter a height/shade from 0 to 255.
NOTE: The shade value represents height.
("0" is black, lowest..."255" is white, highest)

Adjusts the intensity strength of the Paint Tool, the Eraser Tool, and the Blur Tool.

Special notes about the "Height" & "Tool Strength" features in the Input Toolbar: You can achieve a sort of "sculpting tool" capability by experimenting with the strength and depth settings of either the Paint ***or*** Eraser Tools. **Example:** Open any ptn, mpw, or graphic file in PE. Select the Paint Tool, select a soft-edge brush and set its shade/height to "0". Now set a low strength value (try a setting of "2"). Paint over your artwork and you'll see the effect of the paint brush "carving" into it, instead of creating abrupt edges if strength was set at 100.

With the Paint tool still selected, change the shade/height to 255. Now when you paint, it will "add material" to any areas with a shade/height less than 255. Use the Blur Tool to blend the edges of your "sculpted" areas further. With some practice, this feature can be useful for adding, enhancing or carving details in your artwork! Try experimenting with the settings when using the Eraser Tool. You can make a "weak" or a "strong" Eraser!

fig. 16



Width of the artwork object

Toggles between locked or unlocked proportionate 2D width/height ratio

2 dimensional height of the artwork object

3D Depth (Z-height) of the object

Special notes about the Adjust Size Toolbar: You can type in your own values for the width, height and depth of your artwork (very similar to the functions in the Designer interface). Keep the Padlock icon turned "on" so that the width/height proportions will stay in sync with each other. Depth is set separately. Generally, when you "upsize" an object, the detail will be better if you "upsize" (increase) the depth as well. Experiment as you wish, until you achieve a practical best result.

The CarveWright Pattern Editor

Tutorial on the use of the Colorization Feature in PE version 1.30 and up - *written by Jeff Birt*

One of the exciting new features in CarveWright's new Pattern Editor 1.130 is Colorization. The first question that will come to mind when you see it is, “Why colorize the 2D pattern view?” What's wrong with plain old grayscale? Let's take a look at Colorization and see how it helps our pattern editing endeavors.

As you know CW patterns are essentially grayscale images where the level of gray determines the depth of carving. Our eyes can only distinguish about 50 shades of gray in an image. In contrast, we can see several million distinct colors. So, it only makes sense that we will be able to visually distinguish much more detail, in the 2D view of a pattern, if we could view it in color rather than grayscale. Colorization displays the 2D view of a pattern in pseudo-color without changing the patterns actual grayscale. So, what about the color pallet chosen? About 8% of men and 2% of women are colorblind with red/green colorblindness being the most prevalent. The colorization pallet was chosen to reduce any problems for those carvers who may have some level of colorblindness.

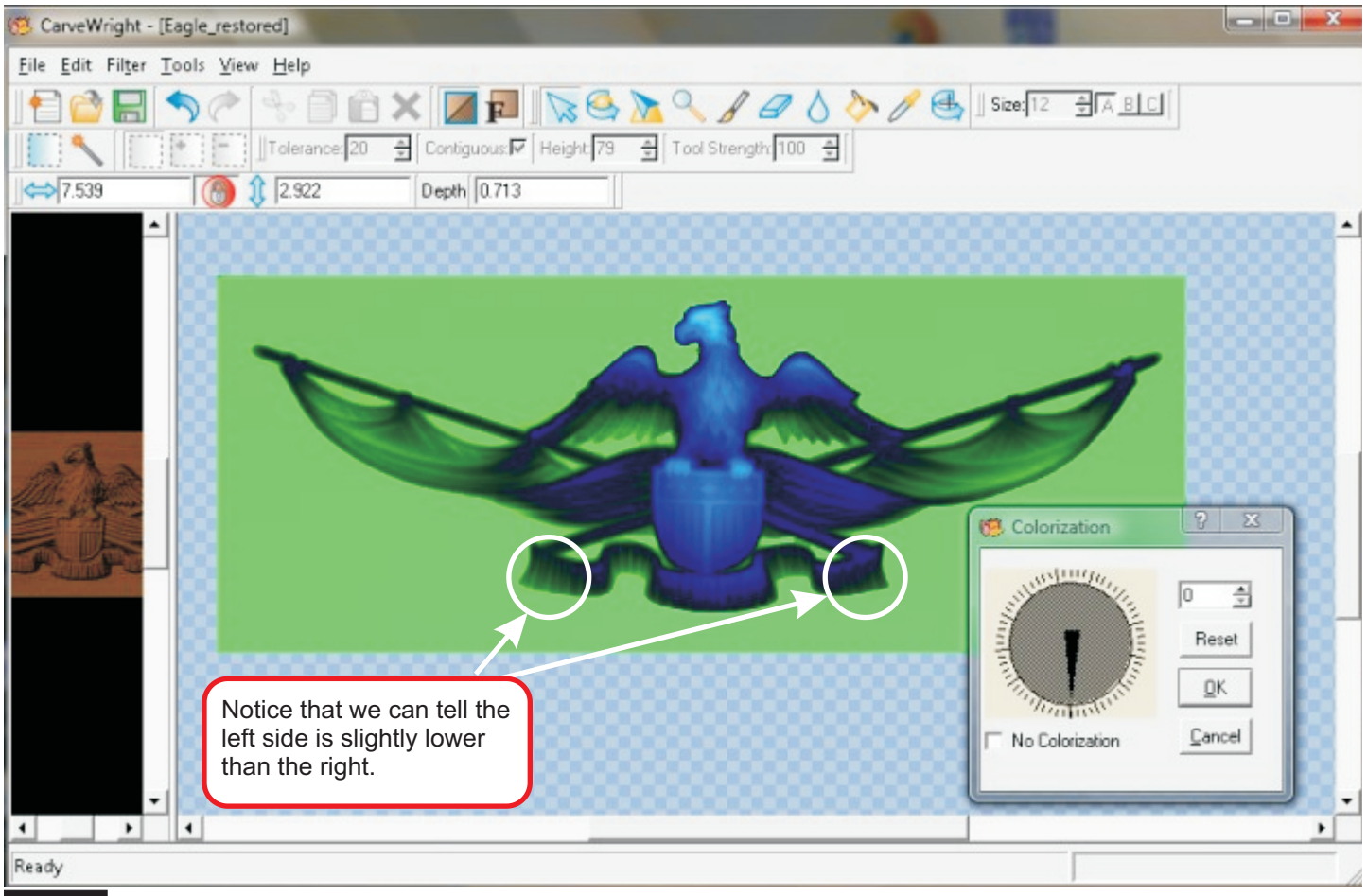


fig. 17

Figure 17 shows a standard view of a colorized 2D pattern image. The Colorization, shown in the lower right hand corner, can be displayed by clicking 'View->Colorization'. This dialog is non-modal, which means that you can keep it displayed while using Pattern Editor. I prefer to drag it over to the side, out of the way. The dial and accompanying spin-box (number box with Up/Down arrows) can be used to shift the colorization pallet. This can be helpful to further distinguish features that are very close in height. The pattern display automatically updates as you adjust the dial so you can immediately see the change. Clicking 'OK' will close the dialog and keeps the current settings.

Tutorial on the use of the Colorization Feature in PE version 1.30 and up - *written by Jeff Birt (cont.)*

Pressing 'Cancel' discards any changes made since the dialog was displayed and closes the dialog. Pressing 'Reset' returns the dial to its default setting. You can also check the 'No Colorization' box to turn off colorization. The non-shifted pallet ranges from a lime green at the lowest level to a blue/white at the highest level.

The pattern shown is from a scan of an antique casting. This particular casting required much physical restoration (filling, sculpting, sanding), before scanning. We can see right away that both sides of the tapestry are relatively level. However, we can also see that the bottom ribbon is a bit lower on the left-hand side. In this particular case it was a great help to see that the restoration work was kept even from side to side. Compare this to Figure 18; you'll notice that these details are hidden from us in the grayscale view.

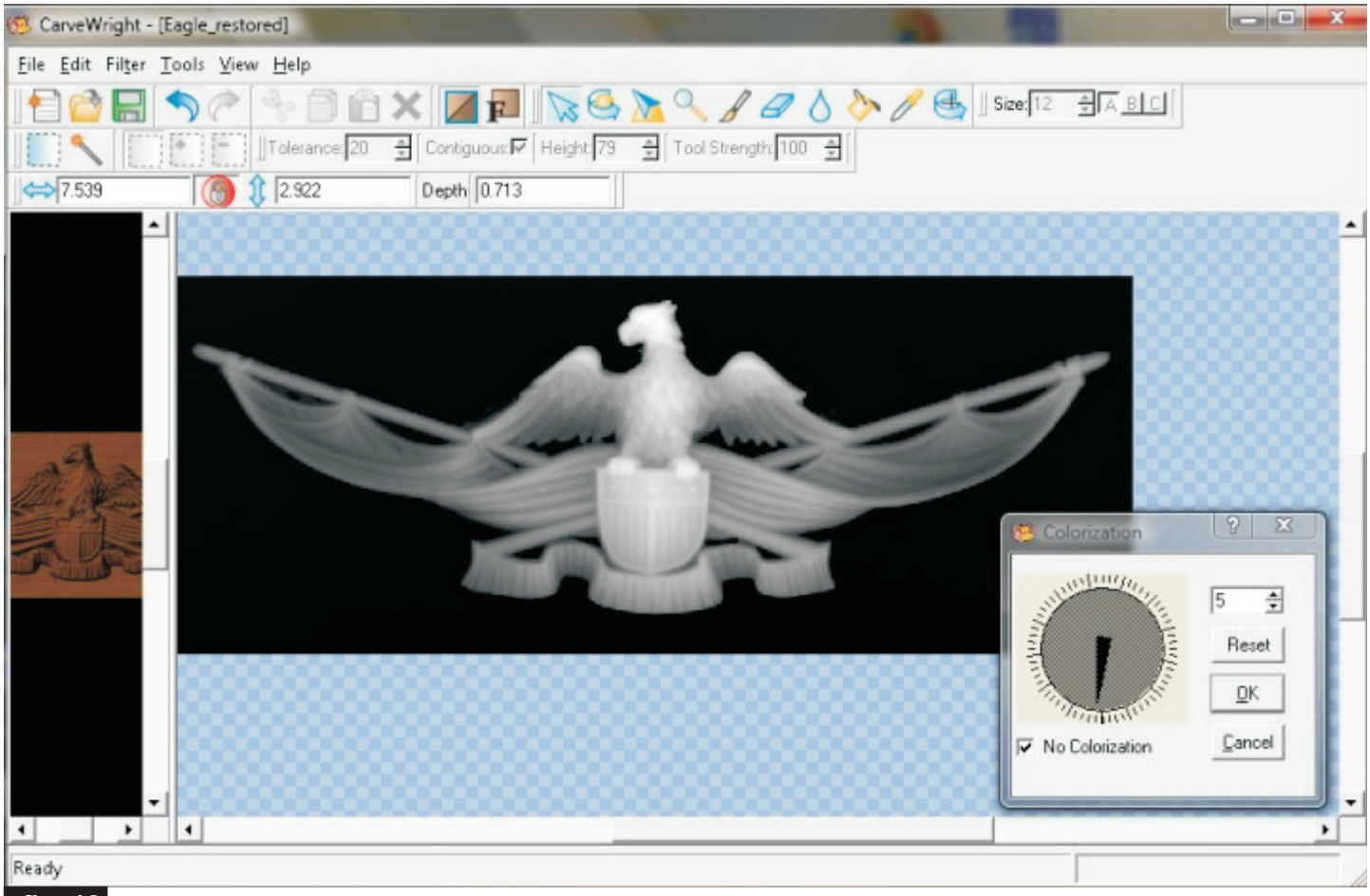


fig. 18

Comparing figures 17, 18 and 19: This is the same unaltered. Notice that the background in Figures 17 & 18 looks flat and level; however, if we shift the color pallet just a bit (5), we reveal a slight taper to the background. Now that we can easily see the taper we can use other Pattern Editor tools to fix it. For instance we can use the eye dropper to find the levels of the two different background shades; which were '1' and '9' in this case. Knowing this range we can use the fill tool set to our desired level, say '1', then we can set the tolerance to '8' (9-1=8), with these settings we'll be able to fill the whole background area in one step.

The CarveWright Pattern Editor

Tutorial on the use of the Colorization Feature in PE version 1.30 and up - *written by Jeff Birt (cont.)*

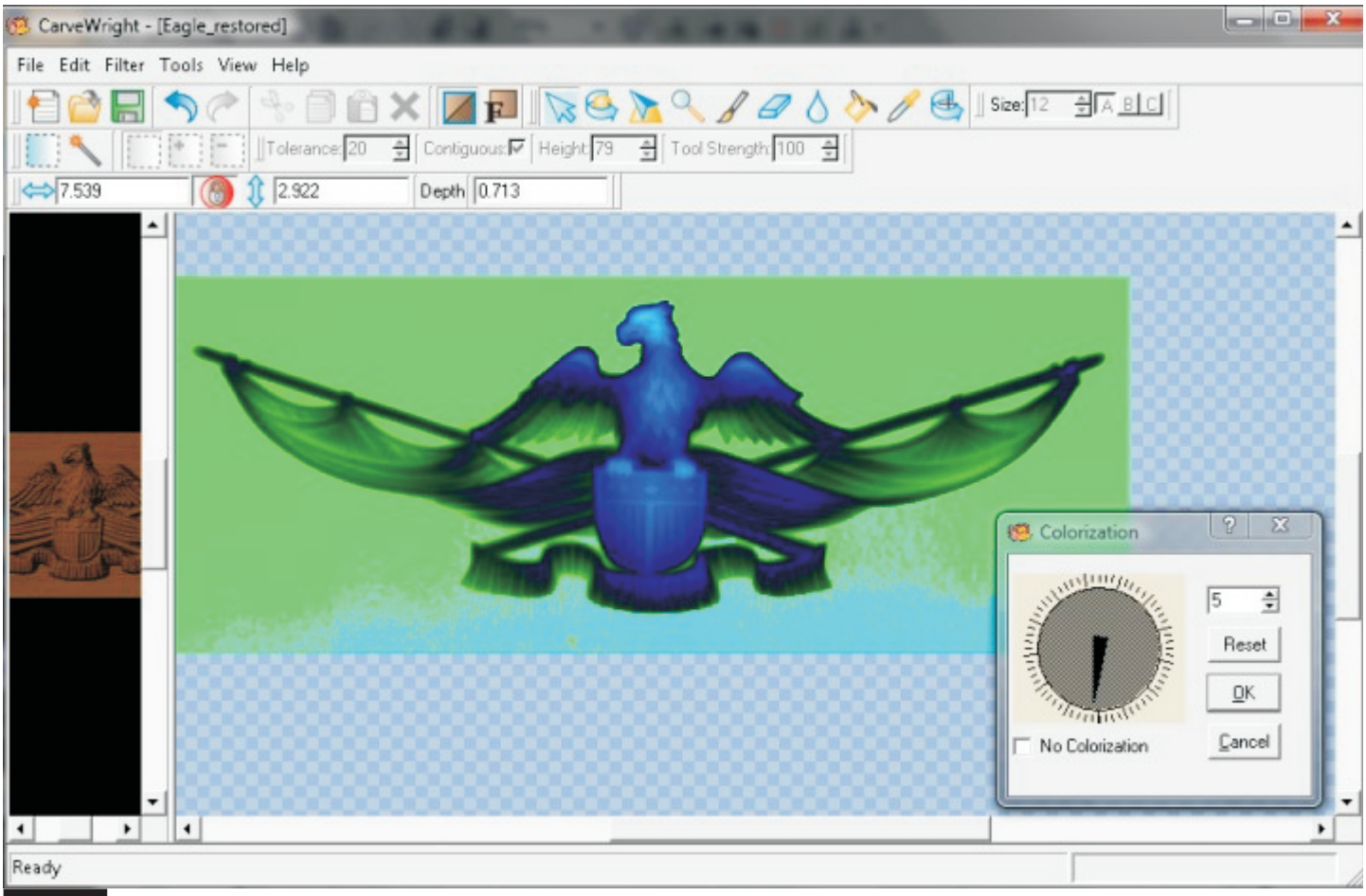


fig. 19

As you can see Colorization is a nice addition to Pattern Editor. It allows us to easily visualize the heights of the various parts of a patterns' 2D view in much more detail than is possible in grayscale alone. With this enhanced visualization we can more easily check and adjust the heights of various portions of our patterns and ensure that areas that should be level are level. The shift-able colorization pallet allows further control by allowing us to differentiate pattern features with only slight differences in height. I'm sure with a little experimentation you can think of even more uses for Colorization. —*end* —

Conclusion

I hope that this Tips & Tricks issue has helped you learn more about the Pattern Editor's useful features. Next month I'll have a couple more tutorials on specific PE functions with illustrated examples similar to the wonderful contribution from Jeff Birt this month!

Until then...Happy Carving!

Special thanks to Jeff Birt of
www.allcw.com
&
Michael Tyler of
www.CarveBuddy.com
for providing
the content for this issue of
CarveWright TiPS and TRiCKS.