CARVEWRIGHT™
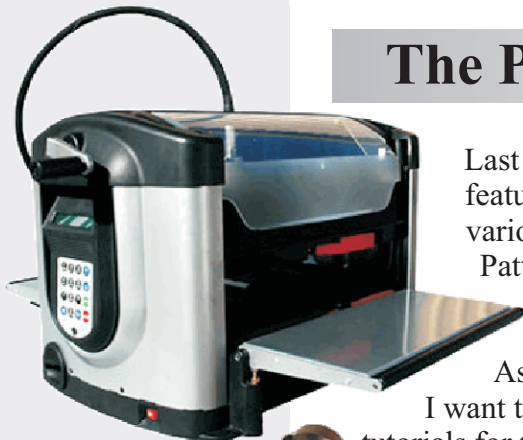## WOODWORKING SYSTEM
TiPS & TRiCKS
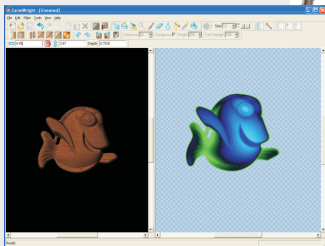
The Pattern Editor - De-Noise & Quantize

by Michael Tyler of www.CarveBuddy.com

**The CarveWright
3D Scanning Probe**

**The CarveWright
Pattern Editor**

Last month's issue covered the features and functions of the various tools in the Carvewright Pattern Editor (JULY 2008 Tips & Tricks).

As an extension of that issue, I want to provide you with brief tutorials for the "De-Noise Filter" and the "Quantize Filter" so you'll have a better understanding of what these tools are useful for.

If you do not currently own the Pattern Editor, you may want to consider it as a future addition. It can be very beneficial if you are interested in creating or editing your own patterns for use with the Carvewright/CompuCarve machines.

If you purchase the Scanning Probe, the Pattern Editor software is already included. However, you can purchase the Pattern Editor software separately if you wish.

See the links below...

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")**

The De-Noise Filter
The Pattern Editor allows you to edit scans done with the Scanning Probe, but it can also help with creating patterns from images downloaded from the web or other sources. The problem with most images from the web are that they are usually in a compressed format which degrades the quality of the images. Typically, these images are in the jpg format and will contain undesirable artifacts or "noise" as it is more commonly referred to. The De-Noise Filter can help clean up some of this noise automatically.

You can start/open the Editor when you click **File->Open** in Designer and select a graphic file type that the Editor uses (bmp, jpg. png, gif, etc.) The Pattern Editor is actually an integrated part of your Designer software, so the Pattern Editor will automatically start up when you select one of those graphic file types from the Designer File menu. **NOTE:** After the Pattern Editor has started, you can open graphic files directly from the PE **File->Open** menu from then on.
For much of this article, I'll often abbreviate the term "Pattern Editor" as simply "**PE**".

After the Pattern Editor is open, you can begin working on the image. **NOTE:** You may want to "pre-prepare" the graphic in your photo editing program before opening it in the PE - common reasons to do this are erasing a background, cropping the photo, re-save as a png and so on.

The De-Noise Filter (cont.)

I'll use unedited jpg's downloaded from the web in this tutorial. All editing will be done within the PE using the Invert Tool, De-Noise Filter, Smooth Filter and the Depth setting box.

Here's a couple quick examples that only took about 5 minutes to do in the PE...

1) I downloaded these two low-quality jpg photos and saved them to my hard drive. (fig. 1a, 1b)

fig. 1a

fig. 1b

2) I opened each photo in PE and immediately turned off the Texture via **View->Toggle Texture.** (fig 2a, 2b)
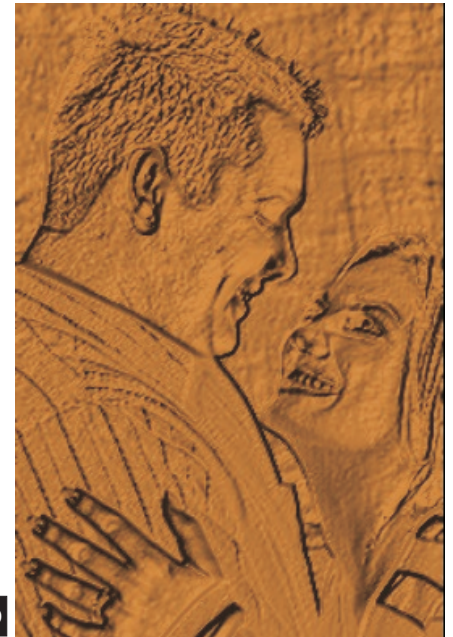

fig. 2a

fig. 2b

As is, neither of these photos will make a good carve on wood - if you zoom in, you'll see they both have a lot of "noise" and a lot of "spikes". (fig.2c)
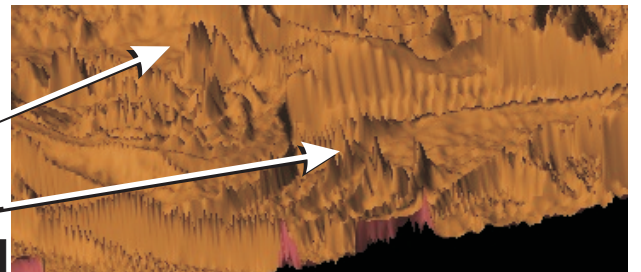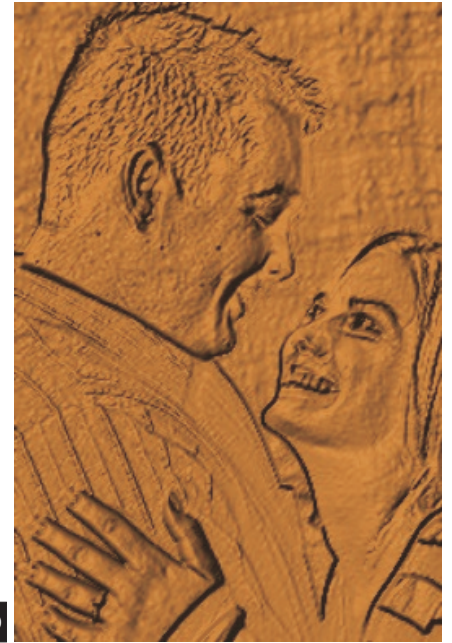
Close-up of "Spikes" and Noise

fig. 2c

The De-Noise Filter (cont.)

3) The next step is to Invert the photos using the Invert Tool. (fig. 3a, 3b)
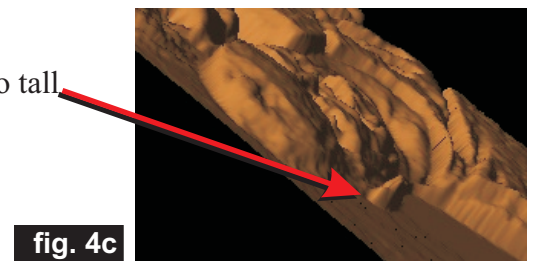

fig. 3a

fig. 3b

4) Now click the De-Noise Filter and type-in (or move the slider) to a positive value. I used a value of "2".

The photos will now have much of the noise removed automatically. (fig.4a, 4b)

fig. 4a

fig. 4b

We still have a problem though. There are still some areas that stand up too tall from the surface in order to be able to carve well. (fig. 4c)

fig. 4c

The Pattern Editor - De-Noise & Quantize

The De-Noise Filter (cont.)

5) We need to lower the entire pattern to a relatively low profile to get rid of the overly tall areas. Simply type in a Depth value of between .10" to .125" and that should take care of the "high" spots.

Depth: .125

Now, using the Smooth Filter, move the slider to a value of 1 or 2 to smooth the pattern overall. (fig. 5a, 5b)
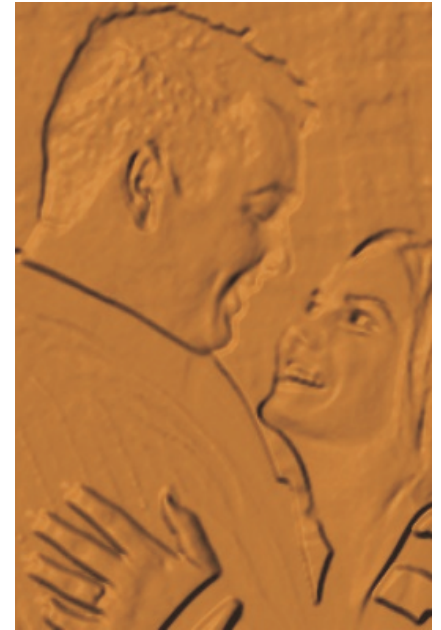
Smooth

fig. 5a

fig. 5b

You can now save the finished artwork as a pattern (ptn) in your Pattern Library. This was a quick way to make a photo ready so that it will produce a reasonably good carve on wood. Of course, you may use many of the other PE tools to erase the background, paint pixels to raise or lower specific areas, do any other touch-up, and so on to make your graphics/photos come out even better. The De-Noise Filter makes things go a little faster when you clean up the majority of extraneous noise in a compressed graphic before any other editing is performed.

The Quantize 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 multi-color logo graphics or to simplify clip art that you wish to create a neat pattern from.

1) I downloaded this logo art from the web and saved it to my hard drive. (fig. 6a)
You'll notice that it has far too many colors to be able to
produce a nice, neat carveable logo as it is right now.
But we'll fix that!

fig. 6a

Here is a closeup of the logo in the PE.

Notice the excessive "noise" and the overall "busy-ness of the logo. (fig. 6b)

fig. 6b

The Pattern Editor - De-Noise & Quantize

The Quantize Filter (cont.)

2) The first step is to use the De-Noise Filter to get rid of most of the artifacts in this graphic. Depending on the extent of the problem, you can use values from 2 to 10 to remove as much noise as possible. (fig. 7)

3) Click on the Quantize Filter and move the slider to the left to reduce the numerical value. The lower the number, the fewer colors will remain, thus getting rid of the "busy" parts of the logo. We want to eliminate all the colors except those that will give us a nice, neat carveable logo. I quantized down to 2 colors. (fig. 8)
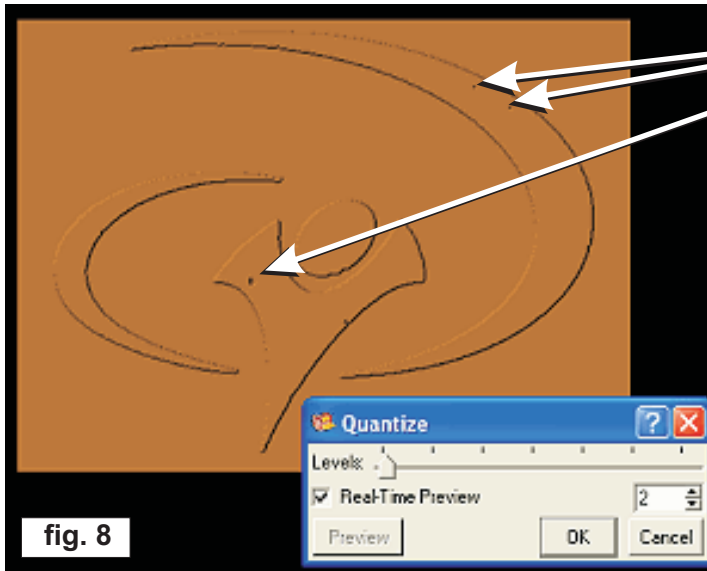
fig. 7

4) If you notice any artifacts remaining, you can paint over the few remaining areas (use the Eyedropper to select a color and the Brush to paint with that color), or even try the De-Noise Filter again. The background can usually be removed by using the Raise/Lower Tool. In this case, the background became black, so the background was easily removed with a setting value of -1. (fig. 9)

fig. 8

fig. 9

5) Now click on the "Round Edge" tool to make sure the perimeter of the artwork is "floored" to the zero plane.

Round Edges

If necessary, you can type in a new depth value that makes sense for the pattern you are creating. This one has thin (fragile) points, so the depth should be kept low. I typed in a value of .125". (Of course you can go higher, then later lower it in Designer itself.) The artwork is complete and can now be saved as a pattern (ptn) in your Designer Pattern Library. (fig. 10)

fig. 10

The Pattern Editor - De-Noise & Quantize

In Conclusion

Not every graphic is suitable for creating a carveable pattern from. Some may be just too poor in quality or have too much "busy-ness" in the overall graphic. However, the tools in the PE will certainly help in most cases. Even if you use external photo editing programs to do the majority of your editing, the final stop will usually be the PE for final tweaking and preparation of the item before saving as an actual mpw or ptn file.

By the way, you should always save your artwork as BOTH a mpw file and a ptn file. PTN files are not editable on computers other than the one it was originally created on, but your MPW files can be opened on any computer and with any future versions of the Pattern Editor. Saving in both formats gives you a safety net of sorts, so that you'll be able to revert back to the raw artwork for further editing if it ever becomes necessary.

I hope you find the info in this issue helpful - Happy Carving!

Michael

RESOURCES...

There are numerous resources for the CarveWright/CompuCarve owner to make their experience with these machines much more enjoyable.

Every owner should join the CarveWright User Forum where fellow users share their experiences and knowledge with these machines on a daily basis. It is a FREE service that you will surely appreciate. A handy Search Feature helps you find answers to any questions you may have.

Another handy resource are the FREE monthly Newsletters and Announcements. You can sign up on the CarveWright Homepage to have the newsletters automatically delivered to your email address each month. You'll see a "Join Our Mailing List" section. Sign up and you'll not miss a thing!