CARVEWRIGHT™
WOODWORKING SYSTEM
TIPS & TRICKS

Multiple Wood Carving/Layering Technique

by Ken "DocWheeler" Johnson - Michael Tyler, Editor

Note from the Editor: My friend Ken Johnson volunteered to provide his technique for carving and layering multiple wood types for this month's Tips & Tricks! The results are outstanding as you can see from the photos, and Ken will walk us through the steps so that we too, can utilize this technique for our own projects...

Things that I've learned about using different wood types in a carving

Most of the carvings where I wanted a different color wood were either thin or had very fragile detail. The only solution that I came up with was to glue the different color wood to the background before carving it. My first attempts were sometimes good and sometimes bad. The failures were because I needed to carve exactly just below the glue joint. This starts my journey.

Starting simple: A carving with just a single region with different wood and a text area. I used half inch thick poplar for the "Hands" in a 3/4" thick oak board for this project. The mpc in **Fig. 1** shows the praying hands inserted at a small angle that I found more "natural" looking.
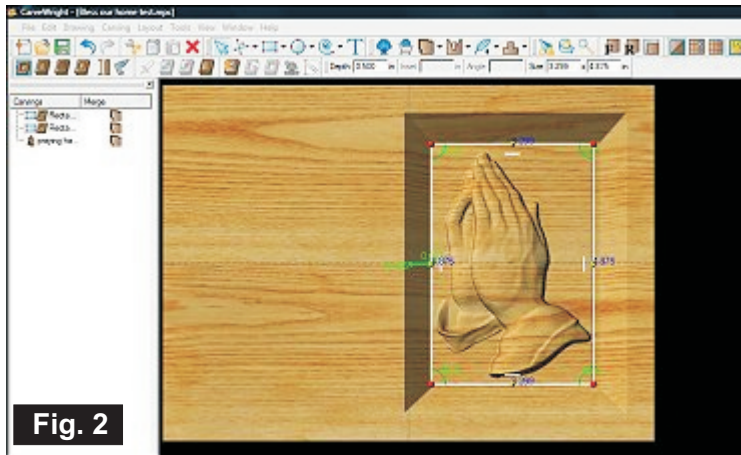
The carve area in this first mpc has a ½" feather and is Just over a ½" deep, a little deeper than the wood that will be glued into it. There must be enough room at the bottom of the carve region to place a smaller region that is still bigger than the hands pattern – see **Fig. 2**.

Fig. 1

Fig. 2

Fig. 3

The Glue-up region is just a little bigger than the "Hands" and a little smaller than the carve region of the Master mpc above. Also note that it is a little shallower so that the glue layer gets carved away.

Now delete the Hands and the larger carve region so that you are left with just a carve region to glue the different wood into. **This second photo is just a step in the process, not an mpc itself.**

With the "Hands" and large region removed you have the second "Region" mpc that will be carved first. (Fig. 3)
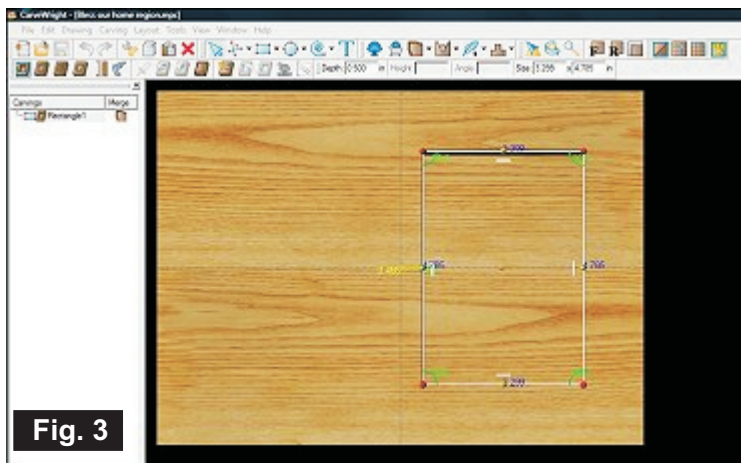
Note that the "glue-up" region is shallower than the finished carve region on the first mpc above and the pattern bottom is even shallower than the "Region" depth.

Carve region depth in the top mpc is .510", the "Region" carve (left) depth is .500", and the pattern depth in the top mpc is .492".

Important: Pick a location on the board for the bits to "touch" that is **not** in this carve region and remember that location.

After carving the second "Region" mpc and gently scraping all of the irregularities out of the bottom of this carved region, glue and clamp the different type of wood (that just fits) in the carved area. Make certain that you have a thin application of glue all over **both** mating surfaces so that it is not "glue-starved" (I use my finger!), and clamp it **very** tightly – you want a very thin glue-line!

Now, after the glue has completely dried, you can reinsert the board into the machine and carve the original mpc, pretty simple really. Remember to have the bits "touch" in the same place as before! So, that means that you cannot run it through your thickness sander and change the surface height between carvings!

The main problem I had with this was that I wanted to save on material and used a sled to do the carving. Since a little sawdust will tip the board, I had to figure out a way to hold it securely. I ended up making the board 2" longer than the board in Designer and cut a 3/16" slit across each end so that with washers and screws, I could fasten it down securely (either face-up or face-down). I had spacers on the sides to assure that it was in position in the "Y" direction and marks (and the screws) for the "X" direction. I also learned that aspen was whiter but did not work as well as poplar.

Now for the more complicated version of this technique with multiple regions and an applied carving. This is simpler in one respect, there is no sled involved (except for the patterns). Actual board carved was 24.5" by 13.5" and the Designer board was 23" by 12" (it could have been as small as 17" by 12"; I just gave myself some extra room, and that was still smaller than the board size that I would put in the machine).
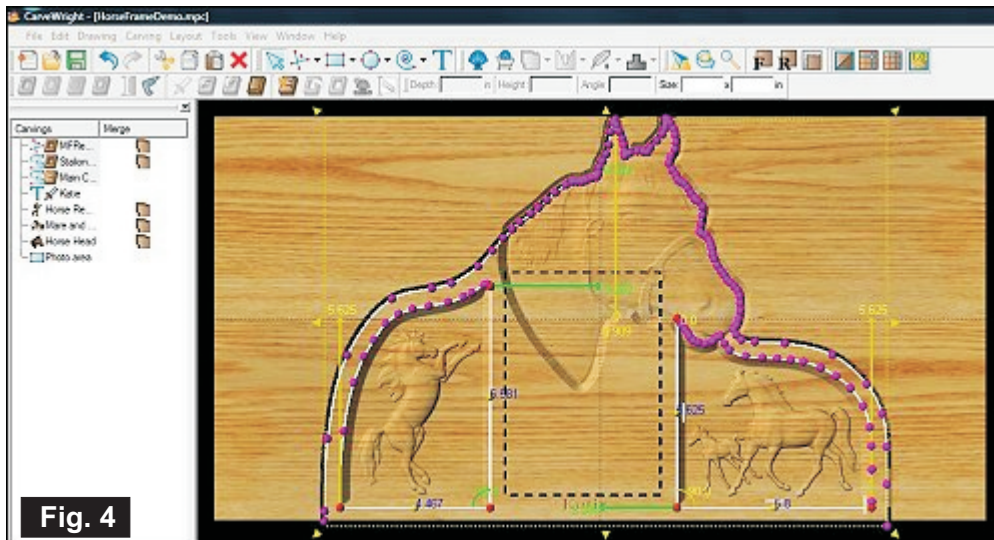
Fig. 4

As you can see in **Fig. 4**, there are many line segments/points/vectors in the mpc. Tip: When outlining this way, make sure the area that you are working in is centered in the screen. (The Vanishing Point directly in front of you.)

The large cut-out was drawn around the large horse head before it was removed from this mpc and placed on another mpc without changing its size. The mpc without the large head is shown later below.
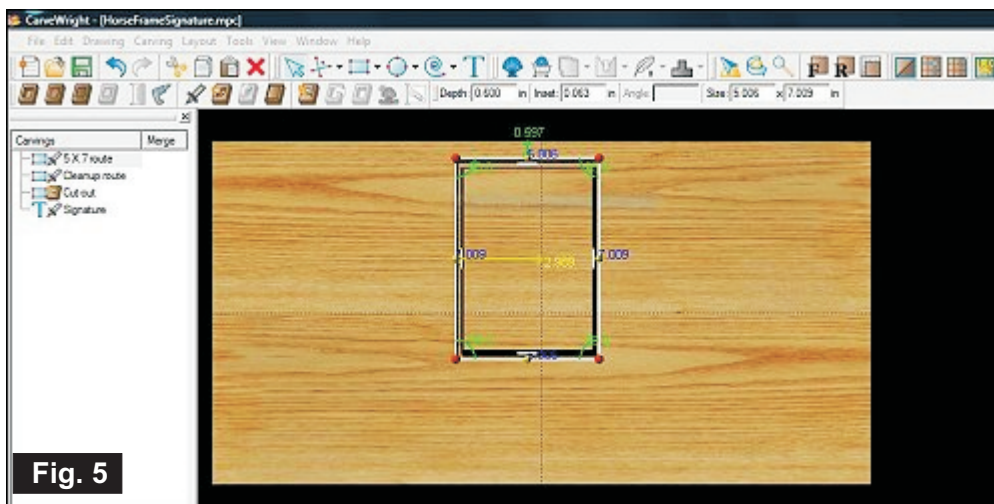
Fig. 5

Note that I chose to cut the bottom off with my table saw after it was carved.
The back (which I made a separate mpc, **Fig. 5**)) has my name, a 5+" X 7+" X .6" route (outside dimensions), a slightly smaller route to clean out the area, and a 4.625" X 6.625" cutout (that I show as a black dotted line on the mpc in Fig. 4).

The horse head that was placed on the original mpc was copied to this mpc (**Fig. 6**) where the board size was changed and the thickness set to about an inch since I had some 4/4 walnut that I used for this piece.

Fig. 6
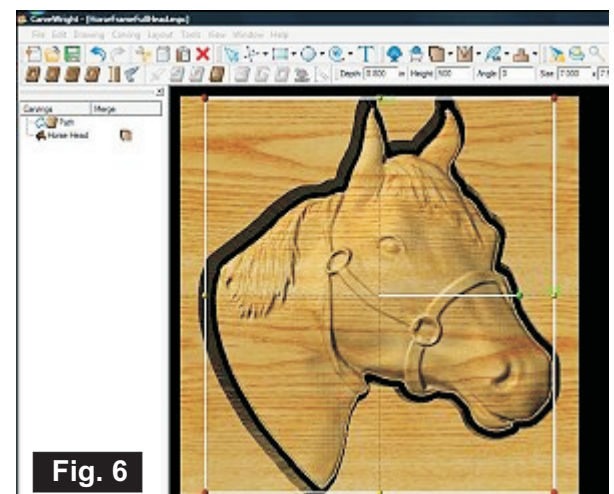
This was carved by screwing pieces of 1" X 1" X 15" boards to the top and bottom of the stock that I used (**Fig.7**) (photo below also shows the tape on the ends for the sensor).

Fig. 7
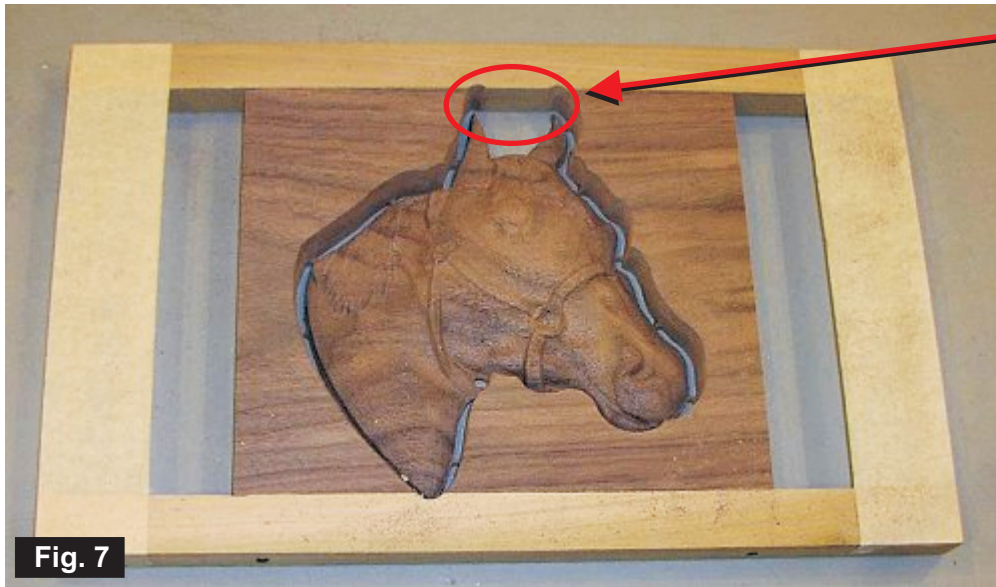
As you can see, I should have fastened the area between the ears to the rails or have wasted some walnut and used a wider piece because it fell out during the cut-out.

Be careful when using Rails like this with cut-outs, the rails have to be strong enough, and held tight enough, so that it can not shift and break your bit.

This machine is a pleasure to use and constantly amazes me as to its potential.

Now create the "glue-up" regions as in the first project above and **save that as a separate mpc** (You don't need pictures of this, do it just like in the first project above, I used line segments for these instead of a rectangle. And then **save it again as yet another mpc** (Mare/Foal) and change the carve regions to cut paths (with the region highlighted, click the "Carve region" icon to REMOVE it and then click the "Cut path" icon to CREATE one) as shown below (make sure that you flip the cut to the outside). **Re-save** it and **create another** mpc named "Rearing" or something. The last two mpcs should look like the picture below (**Fig. 8**).
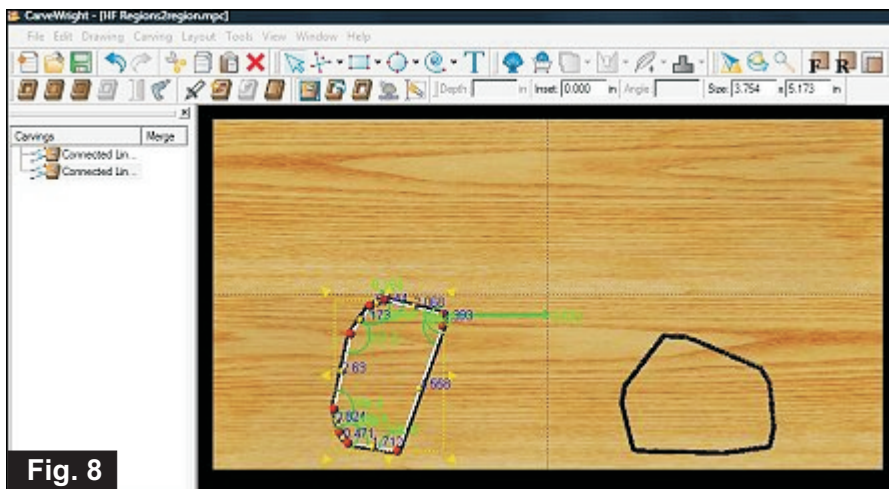

Fig. 8

These last two mpcs will become the patterns for the different wood types (or the pieces themselves if you are feeling lucky). While the "Rearing" mpc is open, delete the Mare/foal region and center the "rearing horse" region on the board. Then change the dimensions of the board and the thickness of your pattern piece (or ¼") and **re-save** it.

Multiple Wood Carving/Layering Technique   (cont.)

Now re-work the Mare/foal mpc in a similar fashion but this time delete the Rearing region. After re-sizing the board, **re-save** this mpc, it should look something like **Fig. 9**.

Fig. 9
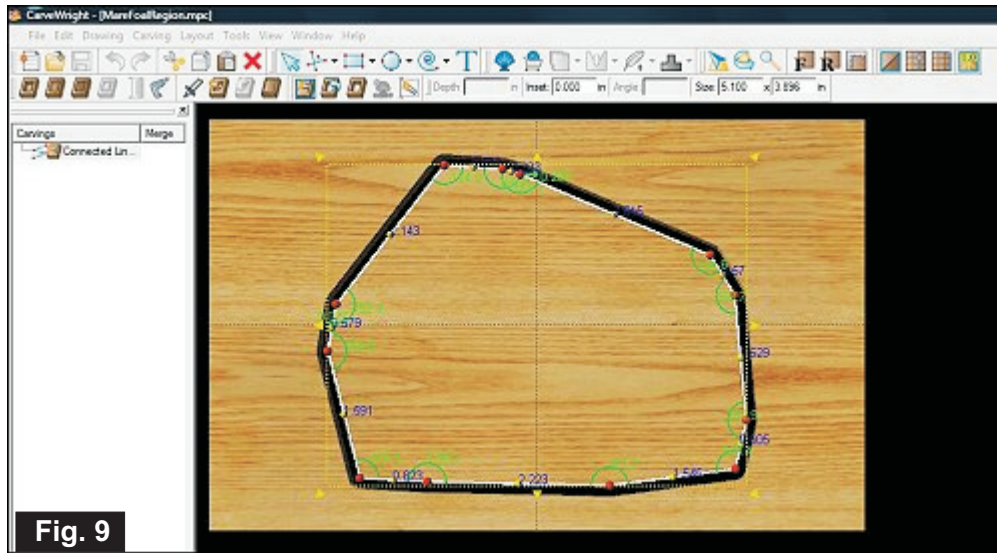
You now have the Main front mpc, the back side, the head for the front-top, the front "Regions", and the two insert patterns.

The Front, back, and "Regions" mpcs each had the same sized boards in Designer, the other three are smaller.
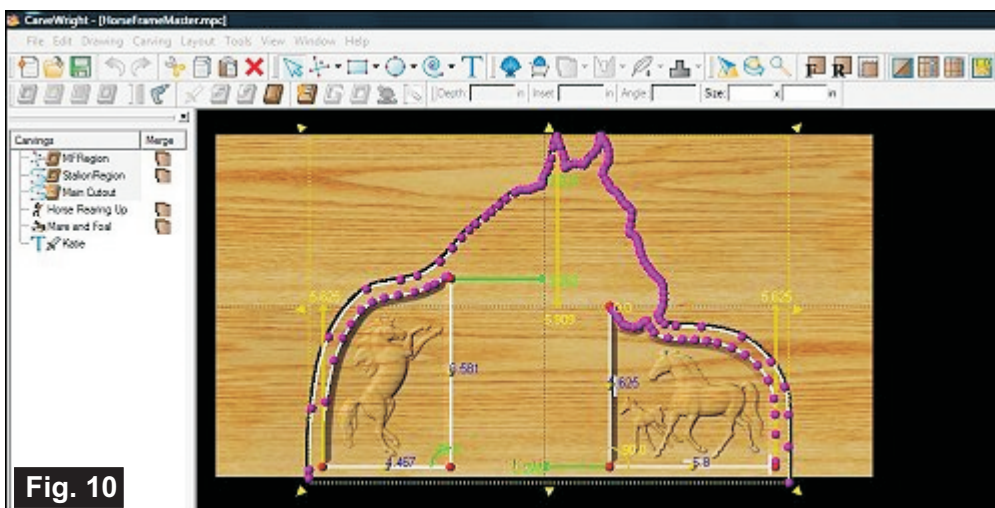
Fig. 10

Here is what the main mpc looks like without the large horse head on it, this is what will be carved. (**Fig. 10**) The one above had the large head on it to show how the cut-out was created.

If you had created a two-sided carving, the photo cut-out area would show here also.

Some nitty-gritty: When carving delicate and/or thin pieces, like the foal's legs, make the pattern as high (thick) as possible. If you thin the Mare and foal pattern height below about .160, you would run a good chance of losing part of the foal's legs (been-there-done-that). So, in the main mpc, I set the depth of the two side carve regions to .260 and set the pattern depth to .242 with a height set to make sure it was at the top surface. Note that if you set the merge to "Additive", the bottom will get set to .260, you do not want that so leave the merge set to Normal. In the "Regions" mpc, I set the depth of the "Glue-in" areas to .250 so it was below the bottom of the pattern and above the finished carve depth.

You may have to think a little bit about that perhaps; by raising the pattern bottom and lowering the final carve, you will increase the thickness of the pattern and decrease your risk of ruining the project by losing pieces of the carving while sanding. You want to just remove material to just below the glue line. Why create this step-off? Consider this – if some detail flows from 1/32nd of an inch to zero over a half inch, and the glue layer is 1/64th of an inch thick, you will have glue to sand off for ¼ inch. The 1/64th inch step works better for me.

The reason that I cut patterns was that I wanted the grain of the wood to match the incline of the Rearing horse and the Mare and foal pattern was close to the size of my material and I did not want to waste material by placing it wrong in the sled I used to cut the patterns.

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After making sure that your material matches your mpcs, do either the "Regions" mpc or the "Back" mpc first. When doing the "Regions mpc, make sure that you pick a bit "touch" area that is not in either of the carve regions AND is not in the photo area – write that location down somewhere so you can use it again when doing the Main front carving. If you chose to make the Back and Main a two-sided mpc, you still need to pick your area wisely.

Cut the pieces that you will glue into the "Regions" areas and glue them in as discussed earlier. If you used patterns, you can use the patterns to cover the glue-in pieces so that the clamps do not mar the surfaces and they will go lower than the main board if necessary. Pad the other clamp-face also to avoid marks. Use enough glue that it remains wet while applying glue to the other surface – yet not enough that it will run.

Fig. 11

At left (**Fig. 11**) is the board just prior to carving the face. Note the pattern pieces lying beside the glued-in pieces.

IMPORTANT: The pieces that you glue in these areas must not extend above the surface more than a 32nd of an inch or so

Carve the large horse head and then carve the Main front mpc while nervously wondering if indeed the patterns will carve as you hope – you can skip the nervous part if you want, but, vacuum the chips often!

When gluing the large horse head on the surface of the base frame, be very careful of it moving – it will. Do whatever you can to keep it from sliding/floating/slipping/moving/skating/drifting (or whatever it tries to do) and clamp it together snuggly and evenly.

Sand, scrape, and file to get the bigger fuzziness off. Now I had a small problem, walnut works best with diluted shellac while oak and poplar need diluted sanding-sealer. It is hard to keep the shellac from getting on the oak for the smaller horse, so I only used shellac on the larger piece of walnut. When dry, sand, scrape, and file until it pleases you. Seal it well since the more the wood moves the sooner the bond breaks between the various materials.

One more thing about shellac, if you do not use the "de-waxed" versions, you will have to use a wax remover to remove the surface wax in hopes of avoiding the problem – it seems to work. I think that the walnut seems to look better with the little yellow/orange that it gets from shellac.

If you are feeling very lucky, you could cut the "photo area" out of the large horse head when you carve it, otherwise, you will have to do it by hand as I did. I cut it after I glued it but I now wonder if it would have been better to have cut it before gluing it so I could have put clamps on the edges to keep it from moving.

I made a few errors, my first attempt left a photo opening too small, and it was my first mpc with the 1.131 software so I chose multi-pass cutout and the board slipped. I increased the width of the design but failed to make the Mare and foal region wider to balance the frame around the photo, you can do better!

Here are some photos of the projects I did...

Fig. 12

Fig. 12 shows my very first attempt. I used ¼" aspen in ¾" oak. The "glue-in" region was above the text and within the final carve region. I set the bottom of the pattern and both carve regions to .250", not a good idea – a lot of glue to get off.

Some of the problems were: Aspen absorbs the sealer into the end-grain and darkens, and I tried to stain the oak around the aspen (bad idea) and found where I had missed some glue. Tried to salvage it and ended up with this!

Fig. 13

The photo at left (**Fig. 13**) used aspen and I had the pattern depth at .250" – lost a lot of the foal's legs. I rebuilt them with glue and sawdust.

These following three were done as described in the article.

IN CONCLUSION

Thanks again, Ken for your time and putting this article together for us - we appreciate it very much! If anyone has any questions for Ken regarding his technique, you may contact him via the CarveWright User's Forum - his forum name is "DocWheeler".

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.