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## Still a Master Craftsman

Phill Pittman spent his entire life using his hands to create wood carvings, until a neck injury about twelve years ago limited his use of them. However, he didn't let that stop him. Instead of crafting only with his hands, he became a digital craftsman (see figure 1), employing software and CNC machines at his company in Garland, Texas called [Masterwerkes](#).

After becoming very good at number of 3D applications, he stumbled upon a 3D modeling program called Rhino, from Robert McNeel and Associates. Soon after, he started experimenting with different CAM applications and it wasn't long before he was attracted to a product called VisualMill, mainly, he admits, because of its low price. However, the more he learned about it, either from his friends who have been using it or from his own evaluation, the more he liked it. Not only was it inexpensive, it seemed easy, powerful and read Rhino files directly. Then, in 2001, he purchased VisualMill Version 3 from MecSoft.



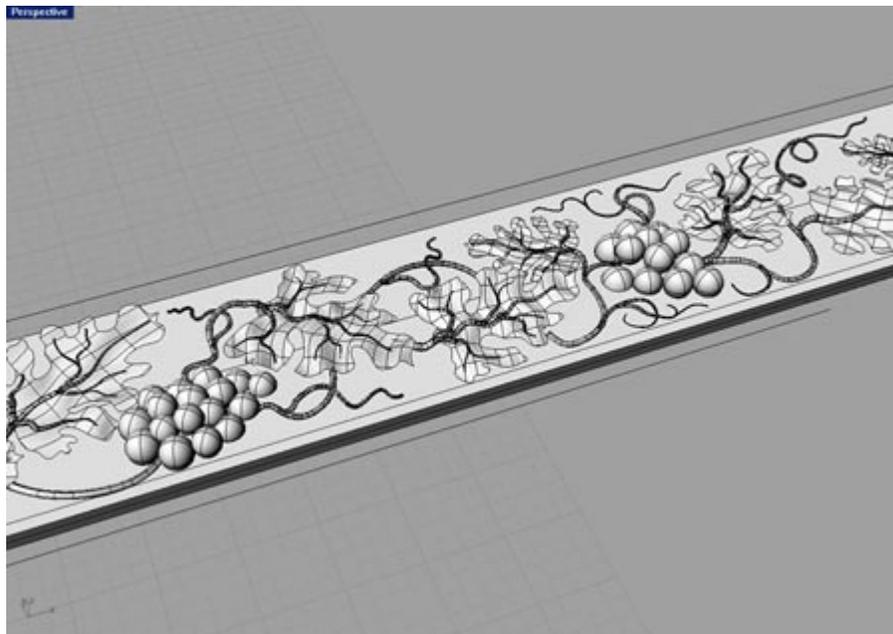
**Figure 1** – Master craftsman Phill Pittman uses VisualMill 5.0 along with other tools to sculpt woodcarvings like this one.

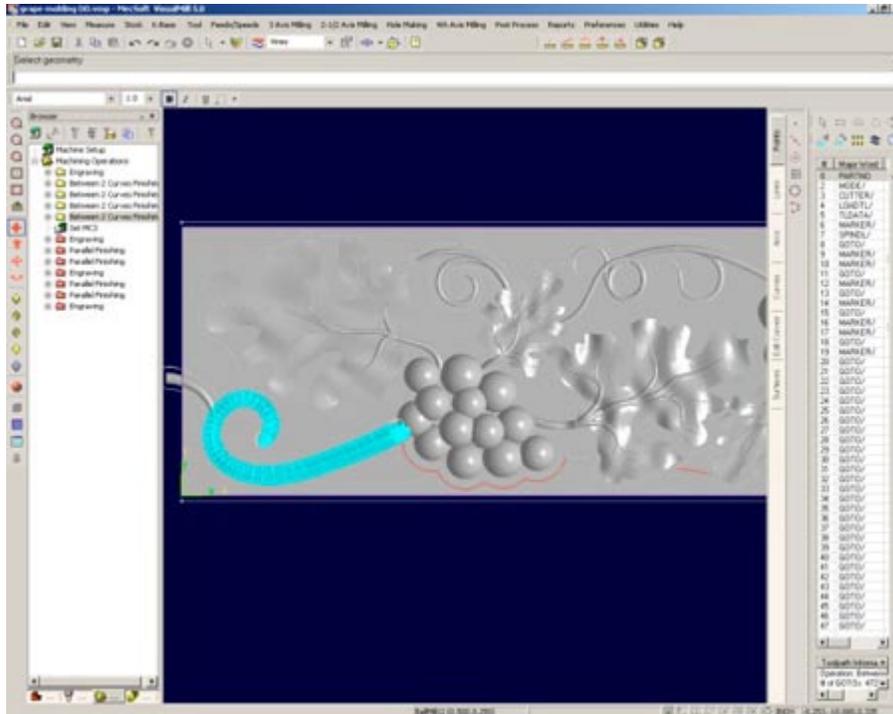
## A Few Early Bumps

While he found it much easier to use than all of the other CAM products he had

evaluated, there were two immediate problems. One was, at that time, the product had no post processor for his router and the second was that this router "was probably the only one in the world that assumed that up was negative Z, rather than positive Z," Pittman recalls. MecSoft took no time to send him a post processor, but fixing Z problem wasn't part of it – that required a change to core kernel of the program. "To my amazement, I had that fix for free, and in less than 2 weeks," Pittman said.

Soon after, without any formal training, he was cutting wood. As he upgraded to version 4 and then recently version 5, he has seen many of his requests for enhancements get implemented into the software. But more importantly, over the few years, he has quickly seen many positive changes in his business. "The level of customer satisfaction is higher because they have a better idea of what are getting, due to the level of 3D detail I can display on the computer," Pittman said. "My business has not only grown, but expanded into new areas. For instance, I am now doing design work for architects, pretty much the entire interior of 37,000 and 57,000 square foot homes." Pittman has also recently done woodcarvings and millwork for yacht and private jet interiors, and has even started a business creating signs and engravings. Reverse engineering has gone from architectural antiques to include automotive and industrial products. But the core of his business is still traditional woodcarvings. He just finished a 3 inch by 10 foot molding, which has about 80% of its surface areas covered in decorative ornamentation (leaves, grapes, etc.) – none of which repeats (see figures 2-4). Pittman feels a job like this was only possible thanks to VisualMill working so well with one of his routers, a 5 x 10 foot machine with four simultaneously cutting heads.





**Figure 3-** The toolpath in VisualMill.



**Figure 4-** The completed piece.

### **Favorite Tools**

Among his favorite VisualMill tools, Pittman constantly pointed to the program's ability to utilize complex regions, which is very important when sculpting human faces, for they typically contain up to 50 machining operations. As noted earlier, VisualMill works well with his modeling program, Rhino, but that is not limited to just the importation of geometry. Rhino's Curve Boolean command allows him to join key areas – sort of like its own Region command – and more importantly

these joined areas can be imported into VisualMill where, with very little work, they can become regions. "This has turned what should have been 3 or 4 hours of work into just 45 minutes of simple fine tuning."

"In short, creating that many regions in other CAM programs would have wiped me out, because they are so hard to define" noted Pittman. He should know, because he's familiar with other CAM products; he consults with other companies to help them get started in their understanding how to apply CNC technology in their business. By the way, he describes many of the other CAM programs as capable, but much harder to learn and "they don't do anything that VisualMill doesn't do, while costing a lot more."

Pittman also gave an example of how the regions make it easier to use other VisualMill commands. There's a VisualMill command called Between 2 Curves Machining (see figure 3 again) which allows him to cut detailed areas that are only 2/100 of an inch thick, while getting zero "blow outs." Without the regions, he reported that this cutting took 13 hours, with it, it was only four.

Due to the fine stopovers needed to create certain details, VisualMill's Radial Machining command is another essential tool for Pittman. In addition, new advanced cut perimeters added in Version 5 were a critical enhancement. They allow him to tell the tool bit not cut a surface greater than 85 degrees, for instance, because "you know that the Pencil Trace command would be better for doing that since it more efficient, especially when cleaning up curved areas." Pittman's new sign and engraving business mentioned earlier has been made possible due in large part to another powerful new command – the V carving options that were added to the Engraving routine in version 5. It allows him to cut 2D artwork and text along a curve.

## **The Future**

Pittman is looking forward to a long continued relationship with the product and the company. "MecSoft is working on new tools to fix my specific problems such as cutting this green cedar wood I need to work with. It's difficult because it shrinks while you cut it. Yet they are working on providing new options their Grouped Instance Cut command to fix this problem, even though I believe it is a fairly unique problem, probably limited just to me."

The program's current tools, (as well as the future ones) allow Pittman to create complex large designs that "I could never complete by hand. I can now carve woods with the CNC that I couldn't otherwise. Now I can always find ways to make things work." In addition, he describes the quality as being "more consistent and, because of that, very little hand finishing is ever required." He concluded by saying "in short, I can make more types of products, in less time and with better quality. I say that's quite an achievement. I'm forever a fan."