

**New Wave Woodworking Inc. and Polhemus FastSCAN™:  
“Merging New Technology with the Old Ways”**

*Rudy Schemitz – Owner – New Wave Woodworking Inc.*

Rudy Schemitz, custom manufacturer of furniture and owner of New Wave Woodworking Inc., located in Honesdale, PA, is a pioneer taking woodworking to a new level with the Polhemus FastSCAN. Woodworking has always been a part of Rudy’s life, and he was taught early on by the best craftsmen of his time. Rudy has modernized aspects of the woodworking industry by utilizing new technology, allowing him to bring his business to innovative heights.

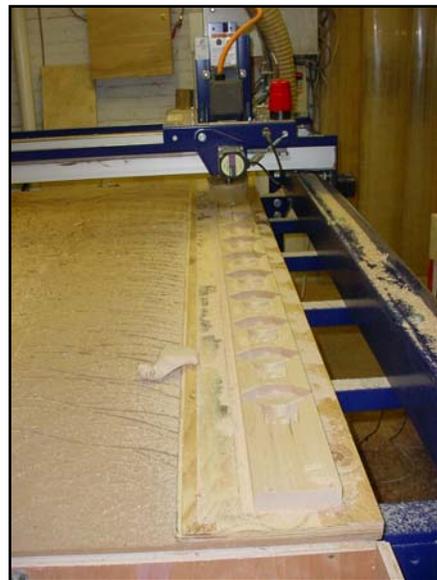
Rudy was looking for a portable 3D non-contact laser scanner to have the ability to reverse engineer quickly and easily and produce high quality furniture fast. In the course of his search he came across the Polhemus FastSCAN, a lightweight, handheld, portable solution for real-time 3D laser scanning. He learned that FastSCAN exports to most popular software packages using common file formats such as: STL, IGS, OBJ, DXF among others. He also realized these file formats can be imported into various software packages for use with CNC and multi-axis mills.

Upon evaluating other laser scanners, Rudy chose FastSCAN because of its quality, portability, reasonable price and customer support. Portability was a key factor as it is often not possible to bring large or immobile pieces of furniture to a stationary scanner station. This portability allows the woodworking team to bring the scanner to the customer job site for quick and easy scanning of complex 3D surfaces.

With FastSCAN, the rapid prototyping process involves scanning a custom built frame, molding, or piece of furniture using the FastSCAN laser scanner, then exporting the file format of choice into one of many software packages available: Rhino®, Clay Tools from Sensable Technologies, VisualMill, ArtCAM, and/or other industry CAD tools. Within the chosen CAD tool/software, the file can then be manipulated and saved before being exported to a CNC or multi-axis machine for carving. The FastSCAN also allows Rudy to digitally 3D archive his custom pieces he has built for future file access rather than a paper document retrieval system.

Photo’s a. and b. show a hand carved leg sitting on a carving machine used at New Wave Woodworking Inc. The leg was scanned using FastSCAN. It was then converted to an STL file and stacked on an X axis in a CAD program to produce a total of 12 legs. The file was exported into a CAM software package and was then able to bring that file to the carving machine.

*(Photo a. courtesy of New Wave Woodworking Inc.)*



The top portion of the legs are carved first. It takes 2 hours to do the tops. When finished, the board is flipped over, and the bottoms are then milled. When finished, the pieces out of the stock on a bandsaw are then cut. They are held in place by 1/2 inch dowels that are modeled into the legs during the CAD process. The hand carver then cleans up the legs and gives them the final detail that the carving machine missed. To carve the scanned leg by hand it took a little over 4 hours from start to finish. To scan that leg, write the programming, machine and finish carving the 12 legs took just about 8 hours. “Bottomline, FastSCAN saved us a little over 40 hours of hand carving time”, says Guy Mathews, 3D/CAD/CAM Division of New Wave Woodworking Inc.

Before Rudy discovered FastSCAN, the process involved digitizing pieces with a 3D digitizer. Although this method is a common and very effective method, the digitizing process can be time consuming and sometimes limiting, depending on the size of the piece being digitized.

With Rudy’s leap into new technology and skillful thinking, he has been able to build his business to a greater capacity, not to mention achieving prominent status within the woodworking industry.



*(Photo b. courtesy of New Wave Woodworking Inc.)*

“Let me add that we are delighted with your product, your customer support and your company as a whole”, states Guy Mathews.

To learn more about New Wave Woodworking Inc. please visit [www.newwavewoodworking.com](http://www.newwavewoodworking.com), email [guymathews@newwavewoodworking.com](mailto:guymathews@newwavewoodworking.com) or phone 570-251-8218. For more information on Polhemus and FastSCAN for woodworking please visit [www.polhemus.com](http://www.polhemus.com), contact us by email, [sales@polhemus.com](mailto:sales@polhemus.com) or phone 802-655-3159.