FastSCAN Cobra™ Takes Breedlove Guitars into the 21st Century

Background

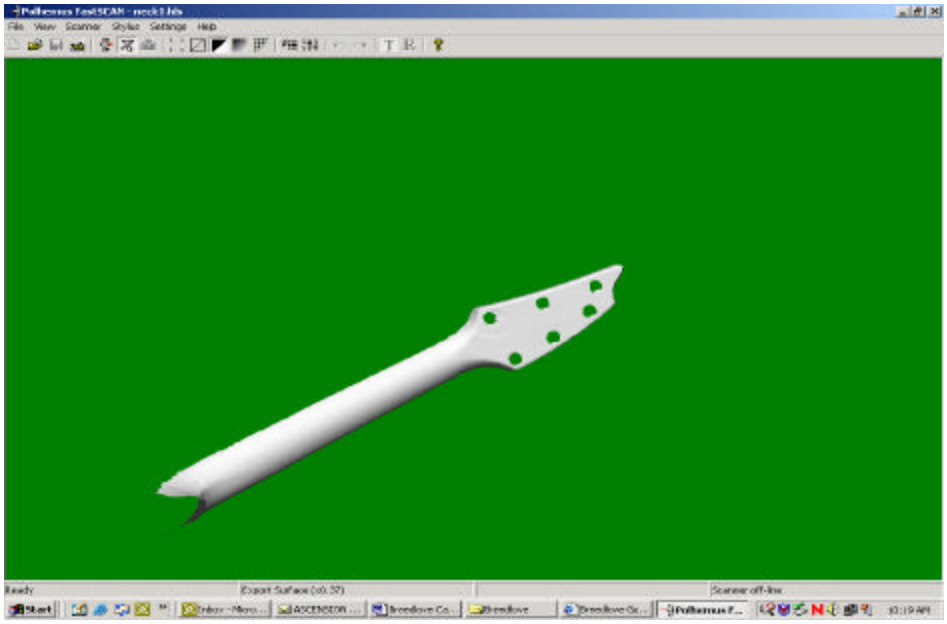
For years, Breedlove Guitars, based in Tumalo, Oregon, was outsourcing the reverse engineering and measuring of their guitars from Oregon to Montana, where they would use a CAD system to gather all the measurements needed to cut the wood and shape the guitars. This process would take several days or often more than a week, which drastically slowed down productivity and, to an extent, held back their business. What Breedlove needed was to find a way to do all of this at their own facilities in a more efficient and effective manner.

How Breedlove Solved Their Problem

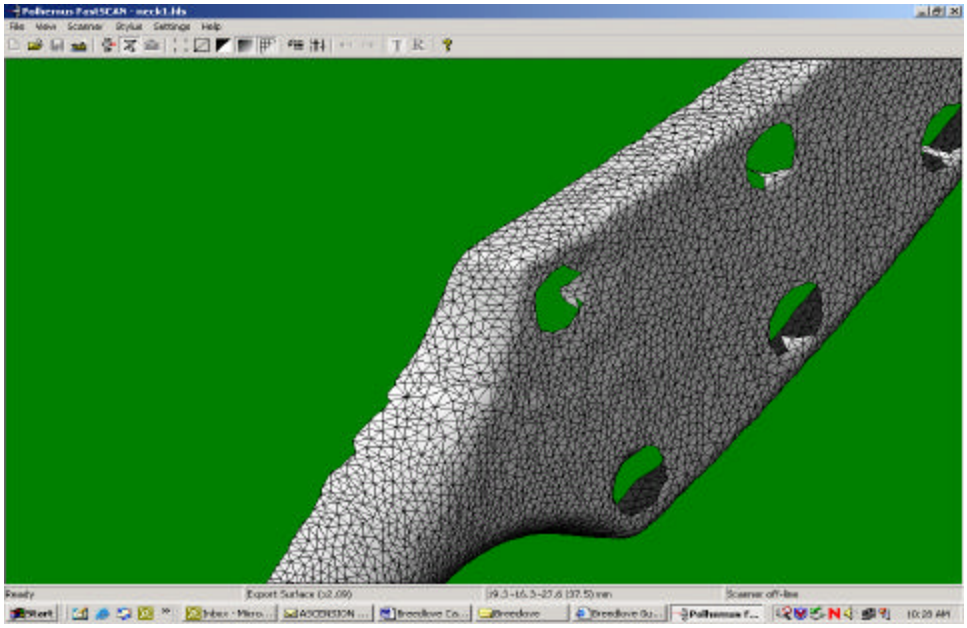
Breedlove contacted a company in Auburn, Washington, called MultiCam Northwest. Through MultiCam, Breedlove was able to obtain "cut and carve" equipment, as well as a Polhemus FastSCAN Cobra. With all these advances, Breedlove was now able to do all of the preparation work at their own facilities in Oregon. The FastSCAN Cobra made it possible for Breedlove to become more efficient in their production of acoustic guitars, by making tasks that once took days to complete take only minutes now.

The Application

To get all the information needed to create the guitars, through reverse engineering, the guitar first needed to be scanned, which only takes a few minutes. After the guitar was scanned and put into a mesh format for measurements, the scanned file was saved as an STL file. Once saved as an STL file, Breedlove then can export the file into a CAD program known as Rhinoceros, a modeling tool for designers that utilizes Windows technology. The scanned image is processed through the CAD system, and put into a program called MasterCam, developed by MultiCam Northwest. This program is loaded onto the Multi-Cut & Carve machine, making it possible for the equipment to cut the wood into a perfect shape for the guitar.



A scanned file of a guitar neck using the FastSCAN Cobra.



Shown here is a detailed scanned picture of the same guitar neck, put into mesh form for detailed measurements.

Results

By eliminating the outsourcing of the reverse engineering for their guitars, Breedlove was able to produce a finished product in much less time. Their productivity increased dramatically, as well as their profitability. The FastSCAN Cobra, combined with the MultiCam system, was a great decision and a change in the right direction for Breedlove.

The MultiCam "Cut & Carve" Solution
MultiCam, LP is the leading manufacturer of CNC routers. Thousands of machines are installed worldwide. Twelve MultiCam Technology Centers are located throughout the United States to provide local support, repair service, sales and application training. The MultiCam is a proven solid production system and organizations from a wide variety of industries find it to be a trustworthy and reliable routing solution. The rigid, all steel construction of the MultiCam makes it a robust platform for high-speed cutting and exceptional edge quality.

The Polhemus 3D Scanning Solution
As the industry's most compact handheld laser scanner, FastSCAN™ is a fast, flexible and attractively priced system for scanning 3D objects and significantly speeds up the 3D modeling and animation processes. Instead of bringing objects to the scanner, users take FastSCAN directly to the object – anywhere in the world. Built with Polhemus' world-renowned FASTRAK® tracking technology, FastSCAN combines handheld convenience with the ability to "auto stitch" 3D models together in real-time. The scanner knows at all times exactly where it is in relationship to the object that it is being scanned. This information is transmitted to the imaging software that instantly joins the pieces into a single, exact three-dimensional replica of the object being scanned. When you're done scanning, the files can be easily exported into nearly all leading CAD, graphics, and animation applications.