THE REINCARNATION OF AN AMERICAM ELM TREE IN MAINE

Herbie

✦ **By Jan Ames Santerre**

Joe Sullivan's big, saucer-shaped eyes when he saw "Herbie"—or what was left of the New England champion elm—brought into Sullivan's Custom Sawmill was indication enough that the sawyer was not fully prepared for what he had signed up for. Asked whether he had ever seen anything like it before, his answer was simply, "never." To most people, the felling of the remarkable elm tree ended an era in Yarmouth, Maine. To others, including Joe Sullivan, the event marked a new beginning in the tale of the tree that keeps on giving.

Utilization and marketing of urban street trees is a relatively new concept in the field of urban forestry. Largely developed over the last 20 years, tree recycling programs were started by municipalities in response to the costs and space associated with the disposal of wood in landfills. As urban land expands in Maine and across the nation, the interest in utilization and marketing of urban timber has grown.

It is this interest that drew such a broad array of individuals to participate in the Herbie Project. Chris Becksvoort, a Shaker-style furniture maker based in New Gloucester, Maine, was one of the first to come forward. He had learned of Herbie's impending demise nearly a year before the 2010 day of reckoning. Becksvoort was invited by Hans Underdahl, a Yarmouth businessman and participant in one of Becksvoort's Shaker-style furniture-making workshops, to lend his expertise to the growing number of Herbie Project committee members.

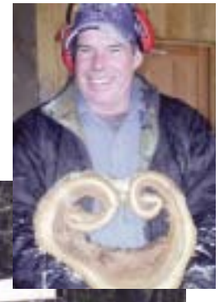
Becksvoort took the opportunity to mention a project that took place in Britain, referred to as "One Tree." In this project, organizers had taken a single oak tree and turned it into hundreds of arts-and-crafts items, utilizing everything from milled lumber down to flecks of sawdust. Becksvoort thought: "We can do that with our elm tree!"

The historic elm was cut down in 2010, after shading the corner of East Maine Street and Yankee Drive in Yarmouth, Maine, for 217 years.

Custom sawing of the massive log was performed with a combination of a Lucas swing arm mill, and a Wood-Mizer band saw mill.

Frank Knight was Herbie's champion for over 50 years, working with licensed arborists to remove Dutch elm disease-infected branches more than a dozen times.

Joe Sullivan's custom sawmill was selected to work with Herbie wood based on the large size of the band saw mill, and the Nyle kiln he uses to dry the wood.



Debra Hopkins, the current Yarmouth tree warden, already knew that the town could not simply cut down the tree and send it to the landfill. She wanted to honor the legacy of Frank Knight, retired Yarmouth tree warden and caretaker of Herbie for more than 50 years, in a much more significant way. Becksvoort's passion, along with that of a dozen other individuals, was tapped to form the Herbie Project Committee and forge ahead with plans.

"Everyone had such enthusiasm and wonderful ideas, there was no way this group was going to let Herbie go to firewood or simple wooden trinkets," Hopkins said.

Sullivan was involved from the beginning as well and had been researching steadily the appropriate methods for drying American elm. With the loss of most sizeable elms in the 1950s and 1960s, he found that sawyers had very little experience with the species. Everyone he spoke with said that elm simply was not a species anyone should work with. Most thought of it as a "junk species" and not worth the time.

That answer did not satisfy Sullivan. He and others already had invested far too much time in the project to give up. Before he could test the drying process, however, he needed to figure out how to mill the giant trunk.

MILLING THE TRUNK

"We could manage all the branch wood on the band saw mill; we could not even move the butt log, though, let alone mill it," Sullivan recalled.

The Wood-Mizer LT 40 sawmill used for most of J.D. Sullivan and Sons custom millwork could handle widths up to 28 inches. Herbie's massive butt log was about 6 feet wide at its narrowest point, more than 8 feet at its widest. It weighed more than 39,000 pounds, according to the crane operator who lifted it onto the flatbed truck that carried it the 10 miles from Yarmouth to Sullivan's mill in New Gloucester.

When the truck arrived at the mill, Sullivan called for backup from the New Gloucester Public Works Department, which supplied a loader to push the log off the truck and into the yard. There it stayed until Sullivan could find a Lucas Mill operator to set up around the trunk to do the milling. In order to ease the milling process, Sullivan borrowed, and then bought, his own Husqvarna 395 chain saw with a 52-inch chain saw bar to take apart the butt log. Joey Sullivan Jr. deftly maneuvered the saw to remove the section just above the clear section of trunk, which split into seven separate leaders, in themselves more than 30 inches in diameter. Sullivan Sr. then was able to split the multiple leaders into several sections and mill with the Wood-Mizer into distinctive crotch grain matching sections.

Months of perseverance finally paid off when Peter Lammert, a forester with the Maine Forest Service,

connected with Rob Sawyer, owner/operator of a Lucas Mill, based out of Kingfield, Maine. Lammert went straight to Bailey's, distributer of the Lucas Mill, to find out how many such mills had been sold in Maine. Only three were known of in the state, so Sullivan's choices were limited.

The first two calls yielded no interest, so when Lammert contacted Rob Sawyer, he was going for the hard sell. Rob Sawyer's interest was piqued, and they were able to make arrangements for Sawyer to assess the job. Two weeks later, Sawyer and three of his sons arrived in the early hours of the morning to begin peeling away slabs from the giant trunk. Setup of the aluminum frame around the butt log took a significant portion of the morning, but once in place, they worked swiftly from the top of the log removing slabs.

It's not to say that milling Herbie's trunk was not without its

A raw slab of Herbie wood measuring 4 inches thick, 60 inches wide, and 10 feet long was what remained after the Lucas mill was finished sawing 1000 board feet from each side of the giant butt log.

A Lucas mill was the only option to saw the massive trunk. The portable mill was built around the log, rather than trying to move it.

Sullivan's Wood-Mizer was able to cut widths up to 28 inches. Here it cuts "cookies," which were used as paddles for the "Herbie–A Tree for All" auction.

knotholes. One thing that causes any logger or mill operator to shy away from working with "urban" wood is the probability of encountering any amount of metal embedded within the log. It is difficult to detect, can destroy expensive saw blades, and can be very dangerous to the mill operator if the blade shatters. In this case, Herbie had served as guardian of the corner of U.S. Route 1 for three centuries. Passersby had included the likes of Presidents George Washington and Teddy Roosevelt, among countless others. There was no doubt that the tree had been used to affix countless signs and fencing, but at the time, only one nail, near the base of the tree, had been encountered.

"Many arborists and sawyers will use a metal detector to look for things like buried cables and eye bolts in street trees," Lammert pointed out. "Those cause the most problems."

The Herbie Project Committee members at one point discussed preserving the bronze plaque that denoted Herbie's significance as New England Champion American elm. Homeowners and abutters Herb and Barb Parkhurst had discovered that at least one if not more of the bronze nails used to affix the plaque were missing. The plaque was removed, along with any possibility that it might be stolen. With the milling, however, it was discovered that the nail had not been removed, but rather was broken, and embedded deep within the trunk. That, along with several aluminum "snouts" presumably used during the early days of Dutch elm disease injection treatments, did little to slow the progress of the mill. Other nails and screws did slow the effort, but sharpening of the blade's half-dozen teeth took less than 15 minutes, and with replacement blades available nearby, it was a minor

inconvenience.

The Lucas Mill is unique in its ability to build around the material subject to planking, in addition to the saw blade's horizontal orientation. Most mills, like the band saw mill used by Sullivan, are oriented vertically, with the saw blade positioned up and down while the wood passes by removing the planks. With the Lucas Mill, the aluminum framing and blade orientation allow for the thin blade to pass overhead, at eye level to the observer, and remove slabs horizontally. On the return pass, the blade is repositioned vertically to remove the unusable portion of bark and sapwood along the sides of the planking, to greater increase the efficiency of the equipment. For large stems that cannot be positioned on a vertically oriented system, it's really quite ingenious, and this milling method was the one for Herbie.

The work on the renowned elm continued for a full day until the Sawyers were about halfway through Herbie's main stem, having cut roughly 1,000 board feet of lumber. After work subsided, Sullivan turned the butt log 180 degrees so that the already-milled section was toward the ground and the untouched bark side was again skyward. The following day, the Sawyers again laid the groundwork by setting the aluminum Lucas Mill frame around what remained of the clear section of the main stem. They continued to saw until they had just one slab left, a plank 4 inches thick, 60 inches wide, and 10 feet long.

AMERICAN ELM

American elm traditionally was used in furniture making, which makes it particularly difficult to understand why the species now has such a bad reputation. The comments that Joe Sullivan heard about the value of working with elm, though, are common. Perhaps it is the interlocking grain of the wood that caused this bad reputation. Most New Englanders at least have some familiarity with the wood through trying to split it for firewood. Anyone who has tried it knows what that interlocking grain does—it is impossible to split.

The grain of the wood, however, is what made American elm useful in furniture making. The green wood is incredibly flexible, and when bent over a mold and dried in that manner, it will not split and will retain the character of the mold. Chris Becksvoort knew this, and used it to his advantage in making beautifully crafted items, such as his "Herbie" wood music stand.

Becksvoort typically works with cherry, which is a very well-behaved wood for furniture making. The elm wood's "quality and behavior was surprising," he said, "and not nearly as bad as people would make you believe."

The interlocking grain did present some challenges, mainly in the finishing of boards. Planing of the boards proved difficult, because the grain would open up and cause the planer to shred the wood. In most cases, the finishing had to be done by hand.

The bad reputation of the elm wood didn't stop Becksvoort and the other 80 or so artisans and craftspeople who signed up to participate in the Herbie Project as consignment artists. Sullivan's sawmill set up several wood distribution dates at the mill that committee members helped organize and staff. The first two dates were set for a month after the tree was felled, and only green wood was available at the time. The cost of $3 per cubic foot was a bargain for those wood turners and furniture makers who needed the wood wet in order to produce their craft items. The artisans went to work quickly, and within just a few days from the initial distribution, turned items, such as bowls, already were being displayed.

"The interest from artisans and hobbyists was overwhelming," Hopkins recalled. "We were getting requests from all over the country!"

PHOTOS BY DAVID LEITH

Interlocking grains of elm create beautiful wood patterns that lend themselves to artistic furniture making. The table on the left was created specifically to honor Frank Knight, and is aptly named the "Knight" stand, by Joe Sullivan. The music stand by Chris Becksvoort is one of the more graceful items.

Character wood such as this book-matched plank (pictured center left) was used to create-one-of-a-kind pieces such as Patrick Plourde's medieval bench (above), and Peter Asselyn's 18-inch-diameter platter.

DRYING THE WOOD

In the meantime, Sullivan was steadily at work manipulating the wood that was to be kiln-dried. Elm is a very wet wood by nature, nearly 50% water by weight. Those using the green wood for turning experienced this. As the lathe would turn, water sometimes would splash out due to centrifugal force. The high moisture content and that twisting, interlocking elm grain made Sullivan very cautious about drying the wood. He had been given some advice about the drying process, but each kiln is different, and in many ways, he just had to go by his own instinct.

Sullivan ended up putting the wood in the kiln for eight days at 100° F opening up the kiln and flipping the boards over to prevent curling, and then returning it for 20 days until a moisture content of 8% was reached to stabilize the wood for furniture making. Once removed, the boards, which had been rough-sawn at 5/4 thickness, were planed back to remove any warping.

Furniture makers and others interested in the finished wood converged on the sawmill for distribution dates later in the spring, paying $10 per board foot. The giant slab from Herbie's butt log also was available for sale. It did shrink a bit during the drying process, and rests at 9 feet long, 53 inches wide, and 4 inches thick. While no one has taken the solid piece to date, only 400 board feet of the 8,000 board feet that Sullivan originally sawed from Herbie remain.

PROJECT GOALS

When the Herbie Project Committee began formation nearly 18 months before the tree was eventually removed, its goals were simple—to honor the life and legacy of Frank Knight for his passion for Herbie and his dedication to the tree and his community. The group aimed to do this by using Herbie's wood to create one-of-a-kind, artisanal pieces that would live forever as reminders of the gift given to the community by Knight in preserving the tree for all to enjoy. Knight's love for the tree was infectious, and people from around the world fell in love with both him and the tree. The project took on a life of its own, however, and in many ways continues to grow.

The Yarmouth Tree Trust, formed with proceeds from the sales of Herbie wood and the consignment artist pieces has grossed roughly $45,000 to date. This money will be used to endow the planting and maintenance of Yarmouth's street trees in perpetuity.

Involvement in the Herbie Project has been a labor of love for businesspeople such as Sullivan and Becksvoort, but it also has been good for business in general. In a down economy, Sullivan's business is booming. He has been contacted by other communities that are removing trees of similar stature, and he already is at work on building countertops for a hotel that had to remove a large copper beech on-site.

"I think it was the exposure through the Herbie Project that brought that job to our mill," he said.

Two giant slabs removed from the stump after the tree was felled are currently undergoing preservation at a Maine Forest Service facility in Augusta, Maine. Once fully preserved in the bath of polyethylene glycol, they will be finished and used for public displays for both the state and the town of Yarmouth. Viewers will be impressed by the massive size of the wood "cookies" and will be able to interpret the history told through Herbie's 217 annual growth rings.

In one final twist to the story of the tree that keeps on giving, scientists at the U.S. National Arboretum years ago conducted studies on Herbie's natural ability to resist the Dutch elm disease virus. Growing materials were collected from the tree and cultivated at the Arboretum facility in Washington, D.C. These sprouts are still growing in trial fields, and they continue to serve as living genetic material to reproduce new Herbie seedlings. A few such survivors already have been growing for about a year, and it is hoped they one day will serve as guardians of Yarmouth's streets, along with communities throughout Maine, just as Herbie did before them.

"Just imagine if we could do this with other big or historic trees throughout Maine," Pete Lammert said. "This should serve as an example to other towns, arborists, sawmills, or anyone interested in working with character wood." ■

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