

Left: Woodworker Loren Bates checks on a load of 8/4 red oak. This log was so large it had to be quartered with a chain saw before milling. The labels will allow the woodworker to piece it back into its original form.

conventional atmospheric kilns (such as solar, dehumidification, and steam kilns), it moves out of the wood much more quickly without creating the moisture gradient that causes warpage, splitting, and case-hardening. The kiln starts out around 100°F and ramps up as the wood dries, finishing around 160°F, which is more than hot enough to kill any bugs in the wood. “We are well above the standards for sanitizing wood,” Jim noted.

“I was interested in kiln drying because I was building a lot of furniture,” explained Jesse. “I couldn’t get consistent kiln-dried wood, which caused problems after the furniture was built. You can build a \$10,000 table and then after a year, cracks open up and the boards move.” The only way to produce quality furniture was to take control over the drying process. Jesse says he looked into building his own kiln, but when he looked at the numbers, the low operating cost of the iDry kiln, the quality of the wood, and the fast drying time made it a better option. “This kiln compresses the drying time [4/4 oak fresh off the mill] down to a week. Compare that with air drying for a year, then putting it in a conventional kiln for another 30 days,” he concluded.

After unloading my lumber from the truck, Jesse gave me a tour of his facility. Although he had purchased two iDry kilns just three months ago, he is already looking into adding two more to double his production. The kiln itself looks like a big shipping container with the con-



Jesse Lamborn shows the inner workings of the iDry kiln. According to Jesse, the automated unit pretty much runs itself once it has been loaded and the thickness of the wood has been entered.

Lucas Portable Sawmills

1260BF/HR in the 2017

The Great Portable Sawmill Shoot-Out™



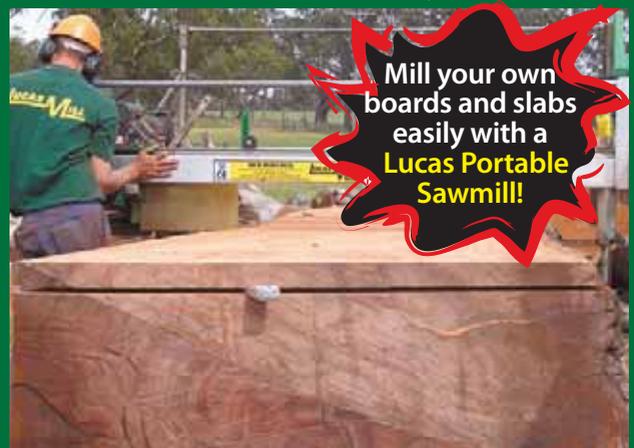
Only mill in the 20 year history of this event to cut more than 1000 bf/hr without the help or need of a secondary edging machine.

North American Distributor:

Bailey's

Need a new sawmill and want the “Best Bang for your Buck”?

Look no further than the Lucas Mill Best performing, best value for money Sawmill Do the math and see for yourself!



888 465 8227

www.baileysonline.com

trols and pump housed in one end and a door at the other end for loading the lumber using a dolly on tracks. He said that setting up the kiln was a straightforward operation. With a level concrete pad inside the building, all Jesse had to do was to maneuver the 7,500-pound containers in place, using a couple of car dollies. "Installation wasn't that bad," Jesse explained. "The controls and pumps are enclosed in one end of the container, all connected and ready to use. It took us less than a day to set both kilns in place and wire and plumb them." Surprisingly, the kilns run entirely on single-phase 208-volt electricity with 50-amp service. The well-insulated container is heated electrically and the water vacuum pump requires less than 3/4 gallon of water per minute when it is running. Jesse estimates that the average operating cost is about \$38 per thousand board feet.

Jesse's kilns are capable of drying up to 2,000 board feet at a time, but normally run around 1,500 board feet, depending on how efficiently the lumber is stacked. The kilns can handle up to 12-foot boards, so drying a load of 8-foot lumber leaves a lot of empty space. Although white oak takes a bit longer to dry than most other species, Jesse routinely mixes species, as long as the thickness is uniform. He says that he just punches in the thickness of the wood and the computer takes over, adjusting the pressure and temperature automatically. The fans are specially designed to operate efficiently in the hot, low-pressure environment of the kiln and reverse the airflow direction periodically to ensure consistent drying. When the reservoir that holds the water extracted from the wood is full, the kiln automatically opens a vent to equalize the pressure, pumps out the water, then returns to the drying cycle. When the wood is near the target moisture content of 6% to 7%, Jesse opens the kiln to check the moisture content with a pin-type meter. As he gains experience, he is getting better at determining how much time it will take to finish the load.

Most of the wood Jesse dries comes straight from the sawmill. Typically, 4/4 hardwoods dry in a week, but air-dried lumber (around 18% moisture content) dries in half the time. According to Jim Parker, many iDry kiln operators air dry their lumber to increase the throughput of the mill, but he cautions that defects that occur when air drying can affect the kiln performance. "If you don't air dry properly and the wood is case-hardened, it slows down the drying process, and you would have been better off putting the wood in green," he explained. "Once wood is case-hardened, it is much harder to kiln dry, and it will still be case-hardened when it comes out of the kiln." Other defects associated with air drying, such as discoloration, warping, and cracking, can also be avoided by putting lumber into the kiln as soon as it comes off the sawmill. For this reason, Jim recommends end coating the lumber as soon as the tree is cut. Jesse takes it a



Loren Bates opens up a kiln to check a load of oak. The pressure inside the kiln is so great that a valve must be opened to equalize the pressure before the door can be opened.

step further, applying end sealer to the last 4 inches of each board before loading it in the kiln. With walnut making up the bulk of the wood he dries, the extra care pays off. He showed me a stack of about 1,200 board feet of walnut. "You can see how straight it is. We had this lumber sold before we even had it out of the kiln. "I haven't had any problem with warping or splitting. The wood that comes out of the kiln is just phenomenal."

To illustrate his point, Jesse opened the valve to depressurize the kiln. The air rushed into the kiln with a loud hiss. It took about five minutes for the pressure to equalize so that he could open the door. "This is from a red oak tree that was cut in downtown Bentonville for some construction," he said. "It was about 52 inches at the base, 11 feet long, and milled by a local sawyer yesterday. We had him get as much quartersawn lumber as possible and got about 1,200 board feet from that one log." He had to quarter the log with a chain saw to get it on the mill, and the boards are all marked and numbered so the woodworker can put the slabs back together, if desired. The wood will be used for countertops and tables by the restaurant where the tree was cut. "We'll have to baby this load so the oak doesn't crack," he added. "It will probably take three weeks." After inspecting the stack and taking a moisture reading, he closed the kiln and started up the vacuum pump. "This is the advantage of two small kilns over a single larger one," he noted. "It lets us do special orders like this and still be able to run the faster-drying wood in the other one."

While the kiln is an integral part of Jesse's business, he provides much more than custom drying. "If someone wants custom sawing, we work with loggers and arborists who can cut down trees and network with sawmills that will cut them to the desired size before bringing them here for drying," he explained. "We also

build custom furniture here in the shop, so we provide full service, from cutting down the tree to the completed furniture.” He noted that the wood shop provides work for his crew while the kiln is running, and that he has a small furniture store in nearby Bentonville, Arkansas, to showcase their work. Most of his work comes from word of mouth, and he noted that his ability to go from tree to furniture, and his growing reputation for quality lumber, are keeping him and his crew pretty busy.

Jesse has a talented and experienced team of woodworkers working with him. “I’ve been doing construction and woodworking since I was about 13 years old and built a few hot rods, so I’ve got a pretty wide variety of experiences and skills,” he said. “Brian and Loren each have years of woodwork and cabinetry experience. We all have our specialties, and we use a lot of teamwork in this business. Cameron takes care of the business and marketing, which allows us to focus on what we do. As for me, I try not to micromanage, help out where I can, and make sure everyone has what they need to do their job.”

With an eye to the future, Jesse says that he is already looking at adding two more kilns and possibly setting up his own sawmill. “We sell hardwoods across the nation. Most of what we work with right now is



The Lamborn Construction woodworking crew (left to right): Loren Bates, Brian Jackson, Jesse Lamborn, and Cameron Greenhagen.

walnut, but we would like to expand nationwide sales. There are a lot of naysayers who will tell you that it is impossible to dry 4/4 lumber in a week, but the proof is in the pudding and they’re welcome to come out and see how well it works,” he concluded. ■

Dave Boyt has a BS degree in Forest Management and an MS in Wood Technology. He manages a tree farm (2006 Missouri Tree Farm of the Year), and operates a band saw sawmill.

BELL'S FIREWOOD PROCESSORS

- 66 HP CAT Diesel Engine
- 44" Circular Saw
- 20" Diameter Capacity
- Single Joystick Control
- 30 Ton Splitter Cylinder



FIREWOOD TUMBLER

- Sturdy HSS Steel Welded
- 4' Diameter Barrel
- Clean Out Chute
- Removes Debris & Bark as large as 2 1/4"
- Works with all of our Double chain Hydraulic Lift conveyors
- Optional Honda Power Pack Available

Please Call for Details

1-888-995-1965

or Visit us Online www.bellsmachining.com

Financing Available



Made In Canada

