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OCTOBER 2015

\$5

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- GATES CUSTOM MILLING
- SMARTLAM MOVES CLT
- IRVING MILL REBOUNDS

# CUSTOM MILLWORKS

By  
**Jessica Johnson**

**North Carolina's  
Gates Custom Milling  
stays focused on  
niche markets.**

GATESVILLE, NC

**W**hen Mark Tuck entered the sawmill business he had a lot of ideas for the future—but he didn't lose sight of the past. The Radford graduate and self-proclaimed conservative spender knew he wanted to take the mill to the next level, but wouldn't do so at the expense of Gates Custom Milling's core principles. So he took it slow, and watched the mill grow from a remill facility to a full sawmill with a capacity of 8MMBF per year.

Tuck says what has inspired the growth mode the last 15 years is the idea that in business you can't stand still. "You're either going in one direction or the other," he says. "Our niche business is constantly changing. How can we do it faster, better and more of it?"

Gates Custom Milling first started in 1979 by Brian Martin, Tuck's father-in-law. Gates did very little of its own production on-site at first. Instead, Martin would go to larger operations and see if they had large customers that wanted smaller things that he could handle, while also producing Atlantic white cedar products.

In the beginning, Gates was basically just a planer mill and some dry kilns. But then in 1982 the mill burned down and Martin was forced to rebuild the planer and vintage block dry kilns. After the fire Tuck came on full time.



**Cedar, cypress, poplar mill produces specialty products.**

Gates Custom Milling officially diversified out of just Atlantic white cedar in 1987 with an addition of a sawmill and soon began re-milling other species. Southern cypress and poplar were selected to run through the new mill, thanks to the ease of procurement.

It wasn't the addition of the sawmill that was the biggest change for the company, Tuck says. Instead, he cites 1992 and the arrival of his wife, Nancy Martin Tuck, to

the office staff that really propelled the company forward. He says that she brought a level of expertise in the office they desperately needed, coming from a strong background in banking. She does all the selling as well as procurement. He says simply, "She's running the business."

The husband and wife team run the mill with complementing skill sets: Nancy handles the business; Tuck handles daily mill operations, with his eye always on capital



**A full decade of capital improvement projects has given Gates Custom Milling more market flexibility while reducing operating costs.**

projects.

Tuck says that in the early 1990s, when they were still finding their rhythm under the new operation's structure, with more species and new management, the mill struggled. An inconsistent supply of Atlantic white cedar really set the mill back at times. Tuck remembers reporting really good months, gaining momentum and then finding it very hard to get raw material the next few months.

## CAPITAL PROJECTS

Moving at a steady clip since 1998, Gates has seen one or two large projects every few years. It hasn't always been easy, but has allowed for a diverse product mix that isn't so dependent on one particular species.

When the decision was made to overhaul the sawmill, Tuck went with MIT for a headrig and carriage thanks to the attractive price point for what he believed to be a very good package.

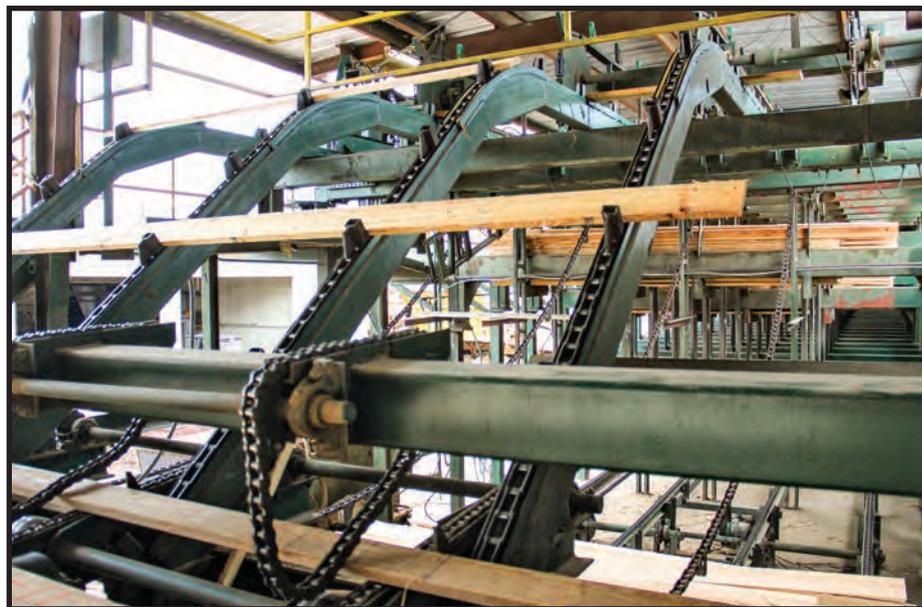
"It was a low enough entry price for us to get into that level of sawmilling. It turned out to be fantastic equipment, very well built," he says.

After running Atlantic white cedar, southern cypress, maple, ash and other hardwoods, it became clear to Tuck the moulder needed to be upgraded. The mill upgraded the moulder (Weinig) facility in 2003 and saw a great improvement in quality.

At this point, everything capital projects-wise had been rather smooth. The work was done in-house, which took longer, but was cheaper, allowing for big projects to be completed on small budgets. But everything changed for Gates when Tuck decided it was time to bring the idled



**Nancy and Mark Tuck use their complementary skills and strengths in managing the business.**



**Sorter installation added to automation level.**

dry kilns back on-line in 2005.

Nancy says it was one of the most challenging things they've done. "Our species are not very easy to dry, especially cypress, since it tends to have wet pockets. It took a lot of trial and error to figure it out," she adds.

Tuck believed it was a necessary step to bring the mill to where it needed to be. Having the ability to dry their own lumber, instead of sending it off and then bringing it back, reduced costs.

Tuck decided to put in a Dawson Brothers lumber sorter in 2007, further reducing labor costs and bringing the mill into another level of mechanization.

After the addition of the sorter, it became obvious the mill's residuals weren't being fully utilized. So, in 2009 a CBI grinder was added to the mill, putting Gates in the hardwood mulch business.

Tuck realized in 2011 that the time was right to make some changes in the vintage planer (Woods) mill. A separate line was added to the planer mill to process all kiln dried lumber. Previously, kiln dried and rough green lumber all traveled on a green chain to the trimmer and moulder.

At the same time as the planer mill project, Tuck really saw an uptick in the mulch business and decided to place a BASF Colorbotics colorizer on the property. The year 2013 saw the addition of a new edger and a new warehouse; while 2014 saw the incorporation of a small log processing system Tuck purchased at an auction. The system was customized by Industrial Systems Consultants.

Tuck says he has a knack for hiring good people—something that has paid off ten fold. Most of the capital project work is done in-house, with people picked up from other lumber companies. Key personnel include Charles Chappell, a millwright with an extensive background in rigging equipment to fit specific needs, and Bryan Bass, who has managed the planer mill operations more than 15 years.

Out of 49 mill employees, most have been with Gates more than seven years. Tuck says his skilled labor and supervisors have "lots and lots of experience and/or degrees." Key positions are held by stable, long-term employees. Nancy adds they are extremely talented, loyal and skilled.

## MILL FLOW

Gates purchases on scale or weight, depending on the logger's request, but all logs are scaled once entering the woodyard. Logs are sorted by length, diameter and species and selected for sawing based on inventory holes and special orders.



Mill residuals end up as colored mulch, hog fuel and pellet furnish products.

Logs are broken down on one of two lines: the Fastline small log processing line includes two vertical and one horizontal saw making three-sided cants. Cants are then sent to a twin band horizontal saw. The vertical saws are Fastline and are using 1.5 in. blades, while the twin band breakdown is a Brewer and uses 1.75 in. blades. "Nothing about that system is how it was originally designed," Tuck says with a laugh.

"We knew when we put it in that we had to have a system that could get us good production out of small logs but still have flexibility," he explains. So he leaned on Lionel Bateman with Industrial Systems Consultants who does all computer controls at the mill. They sat down and developed a system that allows the small log line to be extremely flexible and not just cut one thing all day.

"We cut the log maximizing the width based on the log size and then we incorporated a fairly sophisticated networks utilizing Control Logix with Kinetix Linear Servos in the twin band. So I can cut a small timber out of it and yet still make grade decisions," Tuck explains.

Large logs are broken down on the traditional headrig, provided by MIT, sawn to three-sided cants. Slabs and three-sided cants are processed on a McDonough linebar resaw. A Salem edger handles all the edging requirements for the mill. All lumber goes through a Dawson Brothers drop saw trimmer.

Tuck explains that the mill grades and trims in one decision, before passing through the Dawson Brothers trimmer, using a Lucidyne GradeMark grade reader. All timbers are put on a green chain for manual sorting. Lumber is dried using vintage block kilns.

Noticeably missing from the mill is op-

timization; but that is fine by Tuck. "We haven't gotten to the level of production where we think we can get the payback, we're not quite there. We cut for the market demands, not for 100% yield. We are so customer driven, we have to make decisions based on knot structure," he says.

Rolling stock is a combination of Volvo and Hyundai; lifts are Taylor and USNR.

## PROCUREMENT WOES

Nancy handles all procurement for the mill. The mill leans heavily on a small group of loggers in a 100-mile radius.

Atlantic white cedar comes from everywhere, Nancy reports, saying they bring logs in from as far as New Jersey. "It's a good filler, the log has a nice shelf life. But it's spotty," she says.

She cites the lack of customer knowledge of the species for its up and down market, as well as the lack of an association to really put the species in front of wholesalers. "It doesn't have a loyal customer base and good awareness in the general public's eye. It's an excellent species and people love it when they use it. And people will come back to it when they use it," she explains.

Gates could produce much more Atlantic white cedar than it currently does—should the market demand it. Nancy says that the mill is one of the largest producers of Atlantic white cedar in the country, cutting 1MMBF per year.

## PRODUCTION

Annually, Gates Custom Milling produces 8MMBF of cypress, poplar, maple, ash, Atlantic white cedar and other hardwoods through their own production and an additional 4 MMBF in



**In-house drying has reduced costs and added flexibility.**

supplemented production.

Nancy says that most supplemented production is on the cypress side. Gates is one of the largest producers of southern cypress in the country, and the Tucks are heavily involved in the Southern Cypress Assn.

Gates is a custom, fully integrated mill from the log to the finished product, one of the things Nancy believes has helped Gates not only survive but also grow during the downturn. “We were able to put so many SKUs on a truck, we stayed busy when others were used to selling straight loads of a certain thing. We are small enough to be nimble and react to the demands,” she says.

While Gates might not have huge production, the Tucks are in a place where they are comfortable. “We have decent production, yet we still are flexible enough that if we have a customer that needs five or six certain size timbers, or 1MBF of a particular product, we can still do that,” Nancy says.

For example, a Gates customer can pick

up the phone and order rough dried lumber, a variety of different sized timbers, two units of tongue and groove and some units of S4S, and it goes on one truck.

Tuck estimates that 15% of production is rough green lumber and timbers; 35% is rough dried while the bulk of production has some sort of pattern work to it, whether it be decking, S4S or tongue and groove.

Gates has a variety of grades based on the species. Cypress has two main grades, #2 and select; hardwood is a multitude; cedar select tight knot (STK) and select.

## PROFIT SHARING

A core principle from the beginning, Gates Custom Milling profit shares with their employees. Nancy explains, “Whatever quarterly profits are, one third goes to taxes, one third goes to reinvestment and one third we share with employees. The program is very aggressive.”

Tuck says he and Nancy have worked hard to create a culture of first and foremost safety, but also productivity, efficien-

cy and self-responsibility. He is a true believer in allowing people to do their job.

“One of the greatest things you can give someone is the feeling that they contributed. With that comes self-responsibility. The profit sharing plan brings that full circle. For an employee to be able to see in his paycheck...not only does the mill itself benefit, they do to. They have a say so in their success,” he says.

Nancy laughs when she says that the program has created a little peer pressure among the employees. It also pushes employees to be very aware about safety on a daily basis, not just during monthly meetings.

## LOOKING AHEAD

In the next year, Tuck plans on adding to his kiln capacity by 100MBF with a set of Wellons kilns and looking at a sawdust recovery system. Currently, Gates’ dust goes into its mulch product, in the future they would like to recover it and sell it to Enviva Biomass in Ahoskie, NC, where they already sell their shavings.

For 2016, Tuck has his eye on a butt swell reducer and the remainder of the property around the mill. Right now, the mill owns 15 acres; next year, total acreage will be closer to 40. “Once we get through that process, I know we will need another warehouse,” he says, “There’s a lot of capital projects.”

Nancy sees the excitement as Tuck discusses his capital projects and she is right there with him. What she likes about the mill is its diversity and the capital projects only further that, propelling the business forward.

“We’re very, very diverse on both market area and products because you just never know what is going to come and bite you. If one piece of it fails, there’s enough variety going out there that it doesn’t affect the overall operation.” **TP**



**Experienced supervisors are key to Gates' success.**



**All lumber goes through Cornell trimmer.**