

Millwide

INSIDER

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PRESERVING A LEGACY

Pacific Wood Preserving invests in new kiln capacity for its utility poles

TRIM LINE RAMPS UP IN QUEBEC

Materiaux Blanchet modernizes its trimmer line with winning technology

INSPIRATION MEETS OPPORTUNITY

USNR introduces a bevy of new designs at the recent TP&E Expo in Portland

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Inspiration meets opportunity

Inspiration can come in many forms and from many different sources. Most commonly it is the result of customer and vendor putting their heads together to solve the customer's biggest challenge. And once in awhile it comes via an 'aha' moment when inspiration meets opportunity. You can read about the results of some of these 'aha' moments in this issue.

3 A new pole kiln is the latest investment by Pacific Wood Preservers of Oregon, that is improving the throughput for the operation, and helping to maintain the legacy of company founder, Dick Jackson.

7 When Materiaux Blanchet, a Quebec lumber producer, decided it was time to update its technology it chose a winning combination of solutions provided by a vendor it has always trusted to support its success.

11 A complement to its lumber operation, Malheur Lumber bags its planer shavings for animal bedding. When the company decided to expand this part of its business it chose USNR to design a machine that would meet its specifications.

13 USNR was recently honored to receive the 2012 Innovator of the Year award from EWTA/APA, installing and commissioning the most productive jet veneer dryer in the SYP industry under a vastly expedited schedule of only 3 weeks.

14 For those of you who attended the recent Timber Processing and Energy Expo, you couldn't have missed USNR's large display featuring new, and some would even say, radical innovations. This issue offers a pictorial review, as well as a summary of the two technology sessions USNR took part in.

USNR is pleased to continue to invest to offer you the best products available on the global market.

Sincerely,
Colleen Schonheiter
Editor

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Pictured left to right: Al Anderson, maintenance superintendent; Dan Winkle, plant manager; and Brian Winkle, kiln manager.

Pacific Wood Preserving Preserving a legacy

NEW POLE KILN QUADRUPLES DRYING CAPACITY

An entrepreneurial spirit is what drives many independent business owners and is, arguably, one of the strongest characteristics that sets them apart from the crowd. Dick Jackson (founder, now deceased) of The Pacific Wood Preserving Companies, was one such man who saw greater potential in one of his treated wood processing operations; the hurdle it faced was a bottleneck in drying capacity. The company overcame that issue with a new, custom-designed kiln and new Kiln Boss controls system to operate both new and old drying systems.

The Pacific Wood Preserving Companies (PWP) is the culmination of the vision by Dick Jackson, who founded the business in 1978 at Bakersfield, California. Since then, the company has grown to include operations in Arizona, Texas, Nevada and Oregon. PWP produces an assortment of treated wood products, including utility poles, railroad ties, preservative treated lumber and plywood, landscape ties, crane mats, agricultural products and much more. It markets its products throughout North America and internationally.

Sheridan site

The operation at Sheridan, Oregon was acquired in 2002 (formerly Taylor Lumber and Treating). In addition to products for other industries, this site produces and treats transmission and distribution poles for the power industry. The poles are purchased on the open market; the operation has 2 pole buyers that mark (identify) the candidate poles in the forest, then the raw stock is trucked to the Sheridan site for processing. Its debarking operation runs two shifts every day of the week, including weekends, to keep up with demand.

The Douglas fir poles are sized in the range of 6" to 30" diameter in lengths from 20 to 135 feet. Values can vary from a few hundred to a few thousand dollars for each pole, so preserving the quality of the raw product bears a major concern.

While some of the poles are sent to PWP's site in Nevada for air drying, the Sheridan operation also has a 30-year-old cement tunnel with a single track that it had been using to dry the remainder of its poles. When PWP ownership decided it needed to invest in a new kiln to expand its capacity it investigated the offerings of several vendors, and ultimately chose USNR because of its expertise in kiln technology, and its strong aftermarket support capability.

USNR's record for dry kiln expertise and ongoing customer support won the order for this new pole kiln installation. The improvement in capacity and quality it provides will help preserve the legacy of the visionary who founded this thriving enterprise.



Poles exit the dry end of the kiln once the drying cycle is complete.

New kiln

The new kiln USNR designed is 35' wide x 165' long, with double tracks to accommodate a large quantity of poles in one charge. It is constructed with a steel frame and pre-fabricated aluminum panels. One unusual aspect of this kiln is the addition of a temporary wall that can be closed across the middle of the kiln. This creates two sealed drying chambers, allowing the plant the flexibility of two separate charges at one time. Though this is not common, USNR has provided this feature previously at another installation.

The new kiln has the capacity to dry 16,000 cubic feet (of poles) per charge, and a kiln load of poles will dry in 4.5 days – down from 8 days with the old drying unit. Dan Winkle, plant manager, commented, "We are able to dry 3.5 times the amount in half the time."

The kiln is fueled by a 300hp natural gas boiler producing steam heat. The steam produces condensate that is collected in an in-ground

condensate tank and then pumped back into the boiler in a closed-loop process.

PWP dries their poles prior to treating, because when the poles are green the preservative will not properly penetrate the wood. Drying Douglas fir lumber is significantly different from drying poles. Typically Douglas fir stud or dimension lumber dries in the range of 24 to 48 hours at a maximum temperature of 200F degrees. In the case of poles, only the outer sap of the pole is dried – typically 2-3 inches deep, at a maximum temperature of 180F degrees. The pole's sap is treated after the poles are dried.

Controlling the process

Two other features of this new kiln are Kiln Boss controls and a moisture sensing system from SCS Forest Products. The Kiln Boss system provides expert control of all the drying variables. The Kiln Boss system is configured to control 8 heat zones with the heat source, venting and fans, and works in tandem with the SCS in-kiln moisture sensing system. The SCS system has 8 measuring points; the moisture

"We are able to dry 3.5 times the amount in half the time."

readings are fed to the Kiln Boss system to control the drying schedule and shut-down the kiln at the end of the cycle. A Kiln Boss system equipped with moisture sensing input allows the plant to use time- or moisture-based scheduling. The Kiln Boss system monitors energy usage to ensure the most efficient operation and management of the kiln system.

The Kiln Boss system also controls the old kiln with a single heat zone, and includes a steam pressure sensing unit for steam management; it closes selected control valves when the pressure in the steam main falls below a predetermined level. An additional four SCS moisture sensors will measure the core temperature of the poles in this drying chamber.

The Kiln Boss and SCS systems are accessed through a single computer displaying the operator interface for the system. The SCS moisture sensing system helps to improve grade recovery (when drying lumber) and eliminate over-drying. It is fully integrated with the Kiln Boss system to automatically measure and chart the moisture content of the poles as they dry from multiple sensing points in the charge. Utilizing these measurements, the Kiln Boss system targets the optimum point to shut down each kiln run.

A pole is peeled prior to drying.



The new kiln has the capacity to dry 16,000 cubic feet (of poles) per charge.

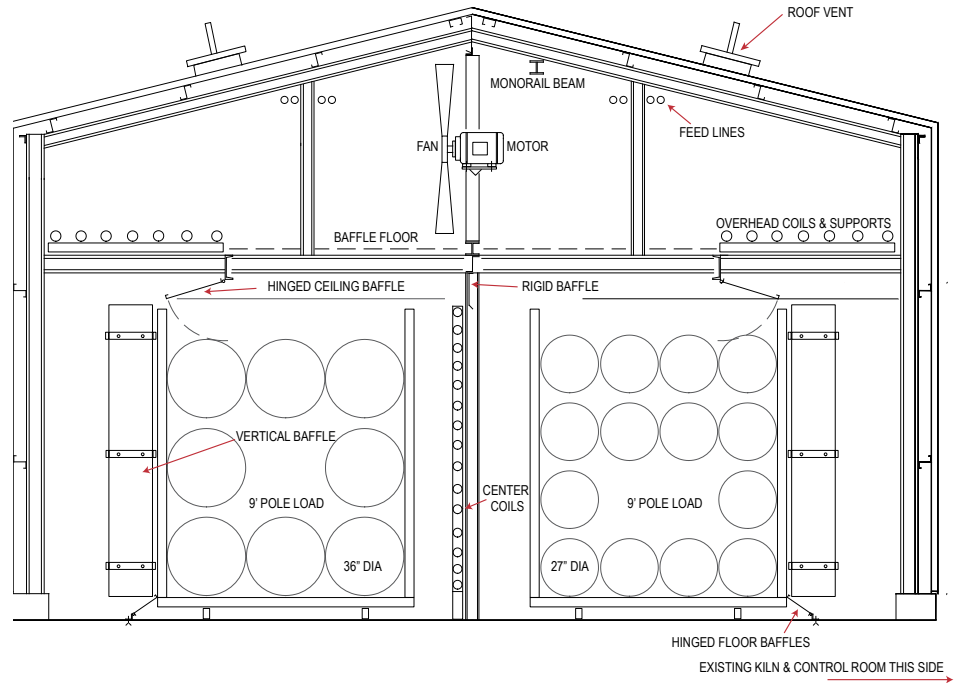
“Compared to our tunnel dryer we have a lot more control (with Kiln Boss).”

Kiln Boss benefits

- ▶ Reduced energy usage by more precisely controlling the process and drying schedule time
- ▶ Accepts any drying schedule and works equally well with any kiln configuration
- ▶ Run on full automatic to let Kiln Boss optimize fan control, or set to manual mode
- ▶ Fully expandable and flexible to meet changing site requirements
- ▶ Remote access via VPN (virtual private network) for USNR trouble shooting and support
- ▶ Customizable alarm conditions
- ▶ Manual backup control
- ▶ Multiple built-in security levels

Dan Winkle was complimentary about the improvement in drying capability with the new kiln system. “Compared to our tunnel dryer we have a lot more control,” and he further commented that the products coming out of the new kiln were of better quality than those dried with the old kiln system.

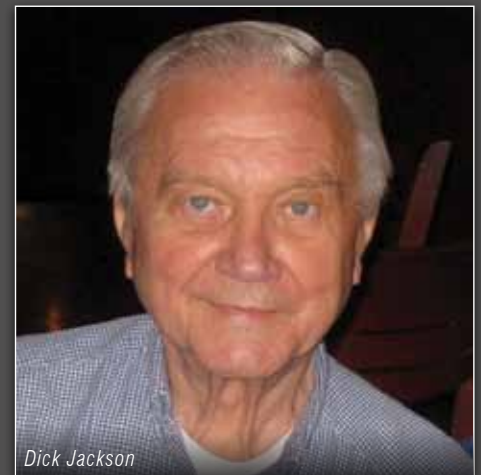
Members of the PWP team involved in this project included Dan Winkle, Plant Manager, Al Anderson, Maintenance Superintendent and Brian Winkle, Dry Kiln Manager.



Legacy lives on

Not only has this new kiln significantly increased the plant’s drying capacity and improved the quality of its products, it has reduced the need and expense to ship products to other sites for drying. Sadly, Dick Jackson who started the ball rolling on this improvement to the Sheridan operation, passed away not long after the new kiln system was commissioned. His legacy and vision live on in the thriving business he created, along with his family and the many employees and customers who depend on The Pacific Wood Preserving Companies for their success. 🌐

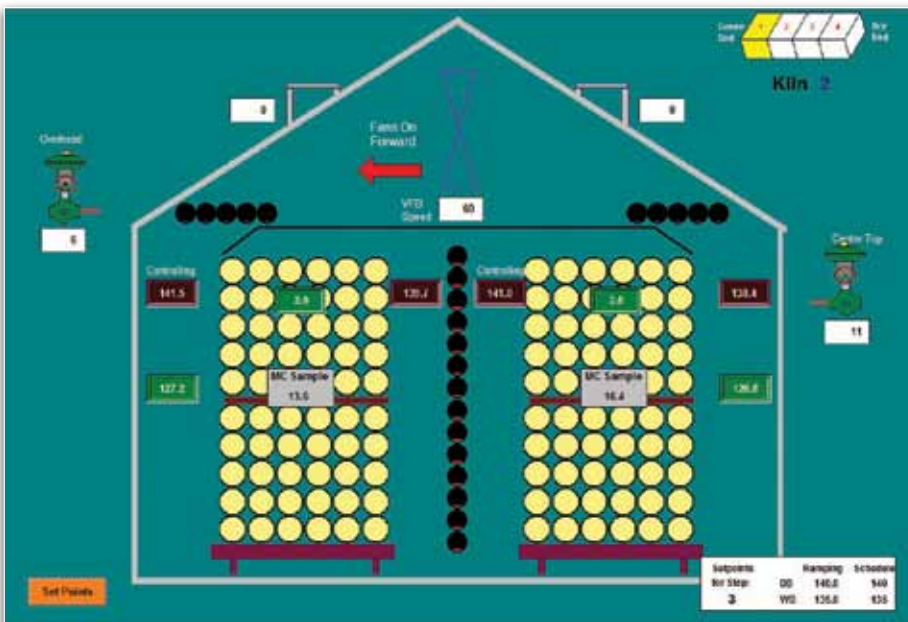
REMEMBERING PWP FOUNDER



Richard (Dick) Jackson passed away on March 15, 2012 at the age of 74, after living for more than three years with inoperable pancreatic cancer.

Dick will be remembered as a successful and innovative businessman, having built The Pacific Wood Preserving Companies with plants in 5 states and employing over 200 individuals.

Elaina Jackson, Dick’s widow, said, “I think if you look up the word “entrepreneur” in the dictionary it would have a picture of Dick. That’s what he was. He loved making deals and was good at it. He was a risk taker. He was an innovator. He thrived at looking at creative ways to do what others would say are impossible. And he did it again and again.”



Section View: The operator can view in-kiln conditions (temperatures, moisture contents, set points), and can manually operate the valves, vents, fans and spray systems. He can also enable/disable the temperature sensors.



OUR SKILLED TEAM DELIVERS AND SUPPORTS YOUR USNR PRODUCTS!

USNR's facility at Plessisville, Quebec boasts nearly 100 talented and dedicated individuals who are responsible for the manufacture and support of USNR products. Most of these individuals are bilingual francophone. The Plessisville operation is centrally located in the Bois-Franc region, midway between Montreal and Quebec City.

The 205,000 sq.ft. shop is one of 4 major manufacturing facilities for USNR, and its largest. The Plessisville plant produces the full complement of USNR products; everything from debarking and chipping, through primary, secondary and planer mill lines. The plant also manufactures machinery for the panel industry; lathes, presses, and more.

The Plessisville site includes a 16,000 sq.ft. parts warehouse to supply the needs of USNR customers in Eastern Canada, North Eastern and South Eastern US, as well as overseas.

The Plessisville facility was founded as Forano in 1873 and went on to become one of the most prominent industrial manufacturers in Canada, and well known for the quality of its designs throughout the world. The company became an industry leader, never deviating from its tradition of total attention to quality inherited from its founders. Over the years the company has developed the infrastructure and experience needed to manufacture an enormous variety of complex industrial products which require a degree of technical skill well above the norm.

USNR has made significant investments in the Forano business since taking ownership in 2001; installing new CNC machines, upgrading production control and information systems, and switching to the SolidWorks 3D CAD system. This adds up to an even stronger business partner, improving on the tradition established by Forano's founders so long ago.

Eric Brousseau is general manager of USNR's Plessisville facility, where he has been employed since 1994. He follows in the footsteps of his father, Ron Brousseau, who ran the operation prior. Eric says, "A company does not survive for over 140 years, neither does it grow, unless it has been responsive to the changing needs of its markets and its customers, and met these with ingenuity in product design and dedication to service."

And the strong team of employees who support Eric at the Plessisville operation, reflect those characteristics. This include nearly 40 long-time veterans whose years of service date back to the Forano days, and in many cases they have been with the company since the 1960's and 70's. It is this very talented team that carries on the tradition of excellence in product quality and dedicated service to USNR customers.





Materiaux Blanchet

Trim line modernization

MOVING AHEAD WITH THE LATEST WINNING TECHNOLOGY

For a company with a proud history of excellence in its products and its processes, ongoing technological improvements are inevitable. Such was the case for Materiaux Blanchet's founding facility when it recently invested in a new trimmer optimization system and Multi-Track Fence. The goal was to take advantage of the latest technology to improve recovery and the value of its products, and at the same time to speed up the process to increase throughput.

Materiaux Blanchet Inc. (MB) is one of the largest independently owned lumber producers in the province of Quebec, with annual production of over 300mmbf and employing nearly 400 personnel. Its two production sites are located at Amos, Abitibi, and the second at the St-Pamphile area, Chaudière-

"We evaluated the majority of positioning systems available on the market, and the features of the Multi-Track Fence were instrumental in our decision."

Appalaches. The company's roots date back to 1958 with the St-Pamphile plant located on the border between Quebec and Maine. Today this operation comprises a sawmill, 4 dry kilns, and a planer mill with two production lines. The plant processes principally fir and spruce in sizes ranging from 1x3 up to 2x10.

Missed opportunity

The trimmer optimization system was originally installed in 1995, and company management recognized that they were missing recovery and value opportunity with the outdated technology. As well, the existing trimmer fence, installed at the same time as the optimization system, was slow and becoming increasingly difficult to maintain. It also could not offer the precise fencing accuracy required by today's standards.

Of the 4 vendors reviewed, USNR was chosen because of the level of satisfaction and return on investment the mill obtained over the years from the original designs that were supplied by Coe and Newnes, and confidence in the USNR team that has supported these systems for many years. In addition, mill management was very impressed with the design and capabilities they saw in the Multi-Track Fence, and wanted to incorporate it into the retrofit.

When this Quebec producer was ready to turn to new technology, it chose USNR's state-of-the-art BioLuma sensors for its trimmer optimization, and the popular Multi-Track Fence.



The BioLuma 2900L sensors provide the trimmer optimizer with precisely accurate laser profile measurements, allowing the mill to reduce trim loss and to increase value and recovery.



Featuring the highest density laser spacing and fastest scan rate, the BioLuma sensors provide 0.3" laser spacing at a 2500 Hz scan rate to deliver highly accurate profile measurements.



The Multi-Track Fence has become a favorite among lumber producers. It is compact, highly accurate, and easy and cost effective to maintain.

"The precise accuracy has allowed us to reduce trim loss, and the system is much more flexible and offers much greater opportunity for increasing value and recovery."

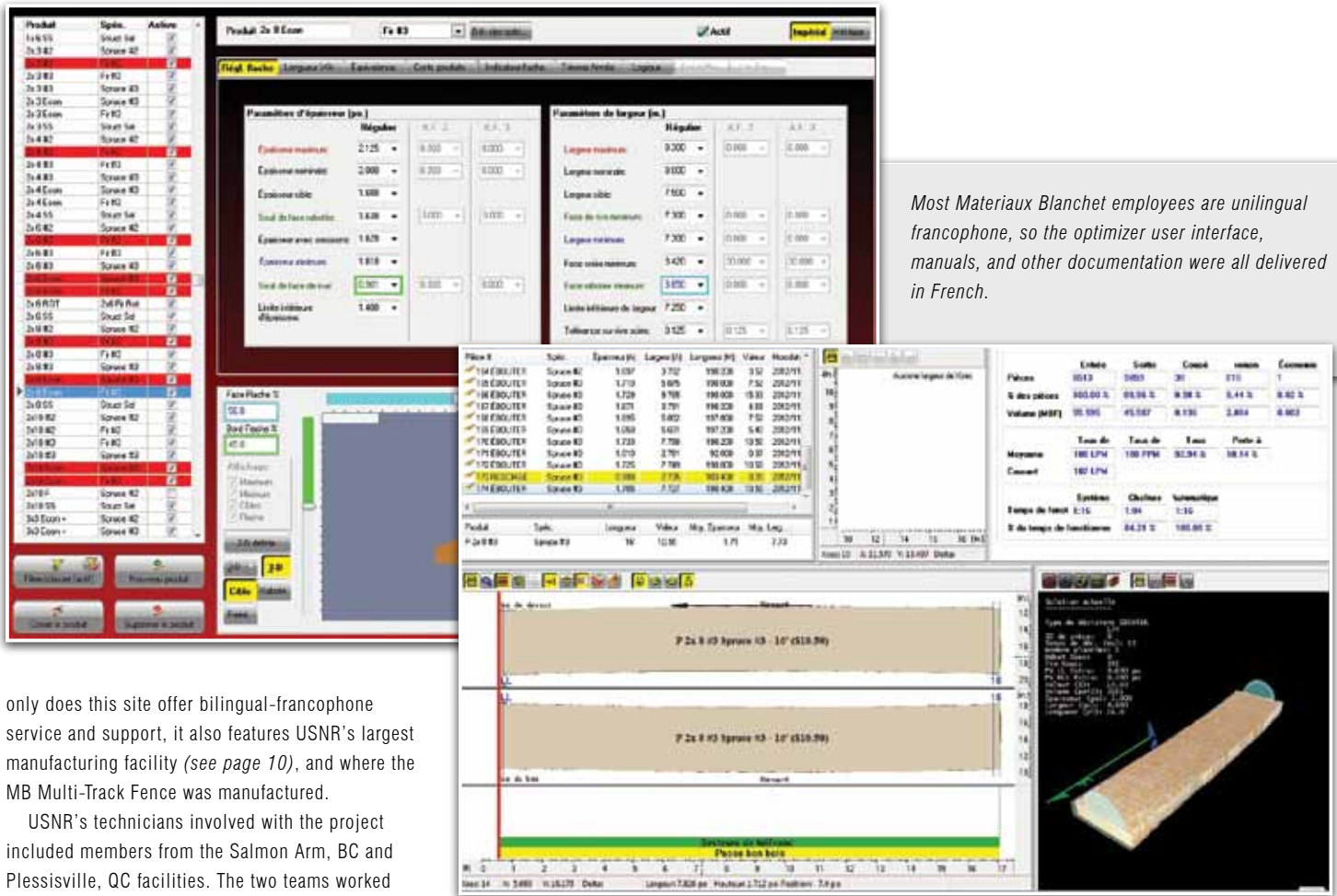
François Bernard, mill manager, commented, "We were looking to modernize the trimmer line for a few years. We evaluated the majority of positioning systems available on the market, and the features of the Multi-Track Fence were instrumental in our decision. It offers many advantages; it is compact, mechanically simple, and it is easy and cost-effective to maintain."

The issues

When a mill retrofits an existing line, adapting the layout is often one of the major challenges, as was the case with this project. Mr. Bernard said, "The main challenge for the project was to modernize the optimization system and replace the positioning system with a minimum of modifications to the existing layout. There were space constraints, and moving equipment to the installation site (in the mill) was also problematic." He noted another challenge was that a large proportion of the mill's staff is unilingual francophone, so he was concerned about difficulty in communicating back and forth with USNR technicians.

USNR's Plessisville, Quebec facility eases the concern for customers in the French-speaking regions about communication difficulties. Not

"The Multi-Track Fence has allowed us to increase our piece rate by 10 pieces per minute while maintaining a high level of accuracy."



Most Matériaux Blanchet employees are unilingual francophone, so the optimizer user interface, manuals, and other documentation were all delivered in French.

only does this site offer bilingual-francophone service and support, it also features USNR's largest manufacturing facility (see page 10), and where the MB Multi-Track Fence was manufactured.

USNR's technicians involved with the project included members from the Salmon Arm, BC and Plessisville, QC facilities. The two teams worked closely to achieve smooth communication and collaboration throughout the project. Members from both Salmon Arm and Plessisville teams were on site for installation and start-up to facilitate an efficient transition to the MB team.

Accuracy, recovery and throughput

The trimmer optimization installation comprised retrofitting the existing scan frame to accommodate new sensors, optimization software and computer hardware. The mill chose the new BioLuma 2900L laser profile sensors combined with Newnes Sawmill Suite (NSS) optimization software.

The high density BioLuma 2900L laser profile sensors provide revolutionary results in 3D modeling with far more detail than any other scanning platform currently on the market. They feature 0.3" laser spacing at a 2500 Hz scan rate for highly accurate profile measurements. This results in the optimizer providing solutions that maximize the fiber for the highest recovery possible.

With the software, proven algorithms provide the most valuable cut solution based on product set-up information as input by the mill, board measurements gathered by the sensors and available operator inputs. Mr. Bernard is well satisfied with the performance of the new system since installation. He remarked, "We've been operating the trimmer optimization system for only a few months, but already the results are encouraging. The precise accuracy has allowed

us to reduce trim loss, and the system is much more flexible and offers much greater opportunity for increasing value and recovery." He went on to note, "The Multi-Track Fence has allowed us to increase our piece rate by 10 pieces per minute while maintaining a high level of accuracy."

Training of mill personnel was performed at the USNR facility at Plessisville, where two MB teams were trained on the new system. Practical training was also performed during installation, and the MB personnel noted the competence and professionalism of the USNR team.

Hitting targets

Mr. Bernard commented, "We are very satisfied with the project. The start-up was fast and efficient, and we rapidly progressed toward our targeted goals for the investment." He also highlighted good collaboration between MB and USNR throughout the project that contributed to its success. He mentioned that MB has always had good support from USNR, and that was a major consideration when selecting a vendor for the project.

The improved North American lumber market is fueling retooling and expansion for many processors, like Matériaux Blanchet. Next on the horizon for the St-Pamphile mill will be continued progression towards modernizing the sawmill processes. 🌲

Expanded Service in Quebec



Our customers expect and demand prompt service. USNR delivers.

USNR continues to expand its operations in Quebec, and we now offer enhanced controls and optimization support in Eastern Canada. Our growing team of qualified bilingual service staff based at our largest manufacturing facility in Plessisville are available to serve you 24/7.

- ▶ Service and support for mechanical, electrical, optimization, and controls
- ▶ Local bilingual technicians are available 24 hours per day, 7 days per week
- ▶ From installation and startup to upgrades and repairs, we're here to help!



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NEW PRODUCT!

Malheur Lumber State-of-the-art log shaver

CUSTOMER COMMITMENT: USNR DEVELOPS NEW LOG SHAVER

As a complement to its lumber operation, Malheur Lumber at John Day, Oregon has been bagging its planer shavings for animal bedding. As this venture evolved the company found it needed to expand its capacity for producing shavings, and it began its search for a vendor to supply a log shaver. With none on the market that met the company's — and its customers' — exacting requirements, Malheur asked USNR to come up with a design.

Malheur Lumber is primarily a lumber operation comprising a sawmill, dry kilns, boiler room and planer mill, and ships much of its lumber products to secondary manufacturers to be made into doors, windows, moldings, cabinets and furniture. Rich Fulton, sawmill superintendent, explained that besides lumber, the mill makes pellets and bricks for use in pellet stoves and biomass burners. The company chose to go into the biomass industry as a way to utilize its waste and smaller log material that was not suitable for making lumber, coinciding with its strategy to improve its bottom line while making use of more of its raw resource. The animal bedding sideline has been in play for quite some time, making use of the shavings coming from the planer. The animal bedding market looks for high quality shavings of a specific size and shape, made from kiln dried softwood, and the pine logs that are processed by Malheur are ideal for this purpose.

The shavings from the Malheur operation are marketed throughout the US. Rich said, "We've been selling our shavings off our planer and bagging them for animal bedding. Our customers really like the shavings we've produced." Rich explained that the Malheur team looked at what was available on the market for round log shavers to be able to utilize small, waste logs and log pieces, and wasn't satisfied with any of the designs they saw.

He contacted USNR's Sam Pope, senior account manager, and asked if USNR would work with Malheur to design a log shaver that would mimic the type of shavings produced at the planer. Paramount was the size and shape of the shavings produced, as well as the production capacity of the machine. Rich explained, "Heads on other machines are a little different, and we wanted more of a planer head. Also, we wanted one (log shaver) that is a lot heavier duty."

Scoping out the design

USNR's Sam Pope and Art Machado led the team that was tasked with developing the design. After reviewing what was available on the market Sam related that, "Competitive machines use a much smaller diameter cutting head. Malheur asked us to come up with a design that would increase the size of the cutting head for greater capacity, and at the same time to make the type of shavings that their

When Malheur Lumber couldn't find what it needed in a log shaver, it contacted USNR to design a machine that would produce the type of shavings its customers required.

"Malheur wanted their shavings to look like planer shavings. We decided to use a standard planer head, and standard planer flat back knives on the cutter head. We knew this would result in the type of shavings they wanted."

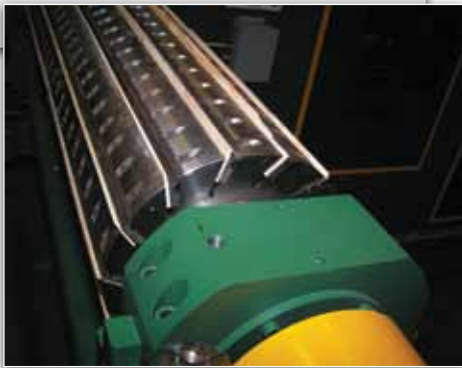


The hopper strokes back and forth via an hydraulic cylinder at a maximum speed of 100 feet/min.

customers are asking for. The main difference with this cutter head from that in a lumber planer is that it is 4 feet wide.”

Art Machado managed the project and has much prior experience designing, installing and servicing planers, beginning in 1984 when he went to work for Coastal Machinery, founder of the Coastal planer. Lead engineer was Petri Saastamo who has engineered much of USNR’s primary processing designs, working with Bill Peterkin and Paul Foby, mechanical designers. Art commented, “Malheur wanted their shavings to look like planer shavings,

The 4' wide cutter head holds standard planer knives, and slides out for ease of knife changes.



so instead of using special knives to produce a particular type of shaving we decided to use a standard planer head, and standard planer flat back knives on the cutter head. We knew this would result in the type of shavings they wanted.”

Another aspect of the USNR design that differs from other log shavers is the capability to pull out the cutter head to change knives. Rich explained that other units he’d seen required getting right into the carriage box on hands and knees to change the knives. He said, “The USNR unit is well built. It is a lot heavier duty than anything we’ve seen.” One other specification asked for was the ability to add another cutter head in future to accommodate increasing the shavings production, if desired.

Shaver specifications and operation

The target production for the shaver is 5-1/2 tons per hour. The hopper where the pieces are processed is 30” x 48” x 76” long with sloped sides. An hydraulic actuated hopper lid keeps loose debris contained within the hopper. The hopper features heavy duty carriage wheels that run on steel tracks. During shaving operation the hopper strokes back and forth via an hydraulic cylinder at a maximum of 100 feet/min., while the cutter head rotates at 1800 rpm. The cutter head assembly allows for vertical height adjustment, and comes with a position indicator to help fine tune positioning. A manual lead screw allows the removal of the cutter head for knife changes.

As shavings are sold by volume rather than by weight, fluff factor is an important element in determining the size and amount of curl of each chip. When the shavings are fed into the bags the amount of air incorporated is determined by the amount of curl. The fluff factor defines how tight the curl of the chips needs to be to fit the right volume of shavings in each bag. The thickness, size and amount of curl can be regulated by how fast the carriage is run across the cutter head, the depth of cut of the knives, the number of knives in the cutter

“The USNR unit is well built. It is a lot heavier duty than anything we’ve seen.”

head and its speed of rotation. These variables are all adjustable in the USNR round log shaver design, maximizing control for producing the best shavings for the market.

Project progression

Rich related that one of the major challenges for the mill came when they decided to incorporate the log shaver into the mill layout rather than having it situated as a stand-alone unit. The log shaver is tied in with the debarker, and shaving and chipping operations are performed on an off-shift. Rich said, “We pre-sort in the log yard and anything that is undesirable for the mill we set aside. On swing shift we run the shaver or chipper.”

For a first-of-a-kind, the log shaver meets or exceeds expectations. Rich said, “It’s doing everything that we required, and has potential to do more.” And time will tell if the operation determines it needs to expand to a second cutter head, but the capability is there if it deems so. Malheur Lumber has installed other USNR equipment over the years including a Log Boss headrig, Schurman edger, L&B resaw, Irvington Moore trimmer, and the recent installation of a chip screen that works in conjunction with the shavings operation.

The Malheur Lumber team involved with this project were Virgil Thomas, head millwright in the sawmill who installed the shaver; Dave Fisher, head electrician who handled all the electrical requirements; Nick Winfrey who was in charge of the layout for getting the material through the dryer, into the bins and then on to the bagger. Nick also worked closely with the USNR team that developed the log shaver’s design.

This new log shaver, in addition to its investment in biofuel production, is helping Malheur normalize its bottom line and respond to the fluctuating supply issues that continually affect the lumber industry. It is recovering much more of its prior lost fiber and is able to maintain a steady employment level. Now that it has accomplished what it set out to do for its animal bedding market, Rich says that Malheur Lumber is going to take advantage of the new process it has implemented, and wait and see what direction the markets are going to take. 🌐

USNR WINS! THE INDUSTRY'S MOST PRODUCTIVE VENEER DRYER



2012 INNOVATION AWARD WINNER

USNR was awarded 2012 Innovator of the Year by EWTA/APA with the installation of a 6-deck jet veneer dryer at Roy O Martin, Chopin, Louisiana. This dryer will accomplish the equivalent production of two dryers, **reducing labor costs by 50%**. It will also **reduce thermal energy consumption by 10%**, and **exhaust fugitive emissions by 15%**.

Expedited installation: The dryer was erected off-line, then towed into place and connected to all services under a projected expedited schedule. This gave the plant the advantage of choosing the optimum time to disrupt its production schedule to install the additional capacity, and allowed it to utilize the existing building structure to house the new dryer.



Once construction was completed, the huge new dryer was slid into position. It will process the equivalent of 2 conventional veneer dryers. With an expedited schedule, veneer producers can now **install and commission a new dryer within a 3-week timeframe** as opposed to the typical 20 weeks.

Canfor Southern Pine – Counter-Flow Kiln

Canfor's Southern Pine mill at Conway, South Carolina will substantially increase its lumber drying capacity with a new USNR Counter-Flow Kiln (CFK). The Kiln will reach temperatures up to 250° utilizing steam heat. Double tracks will feed the unit, designed with a main chamber and conditioning chambers at each end. The CFK will be able to maintain optimum drying capabilities by utilizing USNR's Kiln Boss kiln controls system.

"We have always used USNR kilns here at Conway and look forward to another successful kiln installation. We're also looking forward to the increased production and lumber quality."

Tim Papa, Canfor Southern Pine

Glennon Bros. – Log Sorter Optimization

The Glennon Bros. site at Fermoy, Ireland, will implement a new log sorter optimization system. The system will combine lineal Smart TriCam™ sensors with MillExpert optimization.

Rex Lumber – Kiln Retrofit

Rex Lumber at Bristol, Florida has ordered conditioning chambers for its double-track 84' long kiln. The conditioning chambers will each be 60' long and will be situated at either end

of the kiln. This retrofit will convert the existing steam kiln into a high-production, counter-flow unit complete with pusher system, trams and load weights. Kiln Boss controls will also be included and interfaced with the existing continuous kiln.

Snowbelt Hardwoods – MillExpert™/LASAR™ Carriage Optimization

A new MillExpert carriage optimization system will be installed at Snowbelt Hardwoods, Hurley, Wisconsin. The system will utilize the latest 3D LASAR scan head for front-side scanning. With over 10 times the scan data of other systems and the most powerful carriage optimizer software in the industry, the USNR MillExpert / LASAR Carriage Optimizer has become the clear system-of-choice for hundreds of hardwood and softwood mills around the world.

West Fraser – Edger Optimization Upgrades

West Fraser's Joyce, Louisiana mill will upgrade its 2 lineal edger optimizer systems. The existing Newnes Sawmill Suite will be upgraded to V7.2 to incorporate the latest features and functionality. New computer hardware will also be included.

West Fraser – Trimmer Optimizer

West Fraser is investing in an upgrade to its mill, located at Maplesville, Alabama. This

project will include a new transverse scanning system featuring BioLuma 2900L laser profile scan heads, the latest Newnes Sawmill Suite optimization release, and ControlLogix PLC platform. As well, the WinTally V7 sorter management system will be installed.

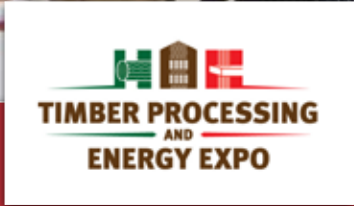
West Fraser – Lineal High Grader (LHG), Trimmer, Multi-Track Fence

The West Fraser site at Whitehouse, Florida, will install an LHG automated grading system, including the E-Valuator module to incorporate MSR/MEL strength evaluation. A new Multi-Track Fence and Model 11 (clamshell opening) Trimmer will also be installed.

Zavisha Sawmills – Gang-Edger Combo Refurbishment

This mill located at Hines Creek, Alberta, purchased a used scanner and optimizer, and contracted with USNR to fully refurbish the system. The existing LPS3 scan heads will be reused and the optimization computer hardware will be upgraded. The transverse edger optimization system will be upgraded to the latest Newnes Sawmill Suite V7.2 software. A new ControlLogix PLC control system will be provided. When complete, the mill will have a fully functional combination gang-edger optimization and control system.

NEW PROJECTS



Portland show review

USNR reveals innovative solutions

USNR STEALS THE SHOW WITH NEW TECHNOLOGY!

USNR's display garnered a whole lot of attention at the Timber Processing and Energy Expo that took place Oct. 17-19, 2012 in Portland, Oregon. Our booth, the largest indoor exhibitor space at the show, was jam packed with new innovations. Here's a brief rundown of the latest advances we showed.

Our display included key elements from our new log line design that is being installed at a greenfield mill in Russia. This new **short log line** offers many variations for almost any application. It will operate consistently at 600 feet per minute (fpm) – no matter the size of the log. From start to finish we secure the log through the process, so no cant turning is

required. Depending on the requirements, it can accommodate 2- or 4-sided canting, with straight or curve sawing.

Our new ingenious board feeding device, the **TransLineator**, was the talk of the show. It rapidly changes the orientation of a board from transverse to lineal orientation, or vice versa. From the start of the



TransLineator



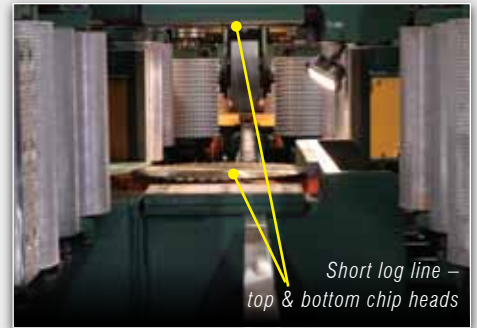
Multi-Track Fence



Short log line



Short log line –
profiling heads



Short log line –
top & bottom chip heads

show, crowds gathered around to watch this amazing system operate. This unique design will revolutionize lumber handling and planer mill layouts, offering new retrofit solutions to long-time challenges.

Our **Multi-Track Fence** has taken trimmer positioning by storm with 40 sold since its launch only 2 years ago. This machine was operating at the show in the USNR booth, and continues to draw crowds as people want to see how it works, and discuss how it can benefit their trimmer lines.

We displayed an operational scale model of the **Counter-Flow Kiln** to demonstrate this concept, as well as a time-lapse video of a drying cycle. The display helped visitors to understand how a Counter-Flow Kiln can dramatically reduce the amount of energy required to dry lumber.

By now you may have heard about our new mobile machine control software suite called **MyMill**, operating via iPads and iPods to control machine

functionality on the go. The MyMill system is changing the way we work; the first installation is operational on a sorter system in the US Southeast. It offers a host of benefits for machine control and operational flexibility.

USNR's **Transverse High Grader (THG)** was also operational at the Portland venue. THG's unique configuration features full 4-face scanning using only 2 rows of sensors. It takes advantage of all the processing attributes that our Lineal High Grader (LHG) has tested and proven in the global marketplace for advanced defect detection and classification. Several visitors to the show stopped to see the optimizer's solutions from the scanned boards and discuss this advanced technology with our technicians.

USNR also took part in two technology sessions. See pages 16-19 for an overview.



MyMill



Counter-Flow Kiln



Transverse High Grader



TECHNOLOGY SESSION: BRINGING GRADE TO THE SAWMILL

BEST-IN-CLASS BIOLUMA SENSOR TECHNOLOGY

This technology session was presented by Scott Norton, Operations Manager for Optimization and Controls. Scott's presentation covered sawmill grade optimization, and he outlined the technologies and processes that USNR employs to deliver grading solutions for the green mill.

USNR's talented group of engineers and technicians have a wealth of knowledge and experience in sawmill and planer mill scanning and optimization. Combined with an in-depth understanding of the issues that market demands place on the process, this is where inspiration meets opportunity.

Proven methods

USNR's philosophy is to develop custom solutions to problems, not custom platforms. We believe in using mainstream platforms, and we leverage those across our entire suite of products. USNR's engineering teams all utilize the same technologies that have been

BioLuma sensors and capabilities



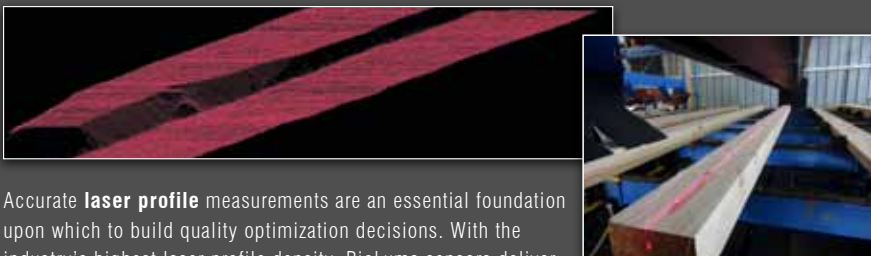
	2900L	2900LV	2900LVG	2900LVG +
0.3" Laser profiling	X	X	X	X
Color vision		0.02"	0.02"	0.01"
GrainMap			X	X
Application	Sawmill profiling	Sawmill classification	Sawmill grading	Final grade (planer mill)

Bright, white and cool LED lighting



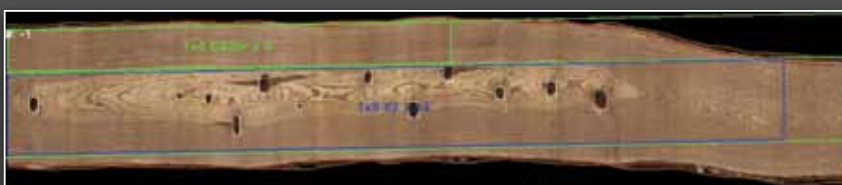
Brilliant illumination: LED lighting is mounted independently from the sensors to achieve the optimum angle for illuminating visual characteristics, with a single connection for power and synchronization.

Highest density laser profile scanning



Accurate **laser profile** measurements are an essential foundation upon which to build quality optimization decisions. With the industry's highest laser profile density, BioLuma sensors deliver.

High density color vision



High density color vision is required to accurately detect fine defects such as small knots, small cracks, shake, rot, pith, etc.

GrainMap™ grain angle measurements



GrainMap is an additional channel of information that ensures the system locates and measures the knots correctly. GrainMap allows us to map and measure the actual grain structure of wood. It utilizes the principle of dot vector laser tracheid imaging. Laser light becomes elongated as it "wicks" along the grain structure, however when it is projected on a knot it retains its round shape.

standardized within the organization, and develop customized solutions to a myriad of problems.

With sawmill grade optimization we built upon the strengths already developed for our planer mill grading, rather than starting from scratch. This ensures a more stable product, a secure upgrade path for future technology developments, and customers can have confidence that the solution is based on tried and true methods.

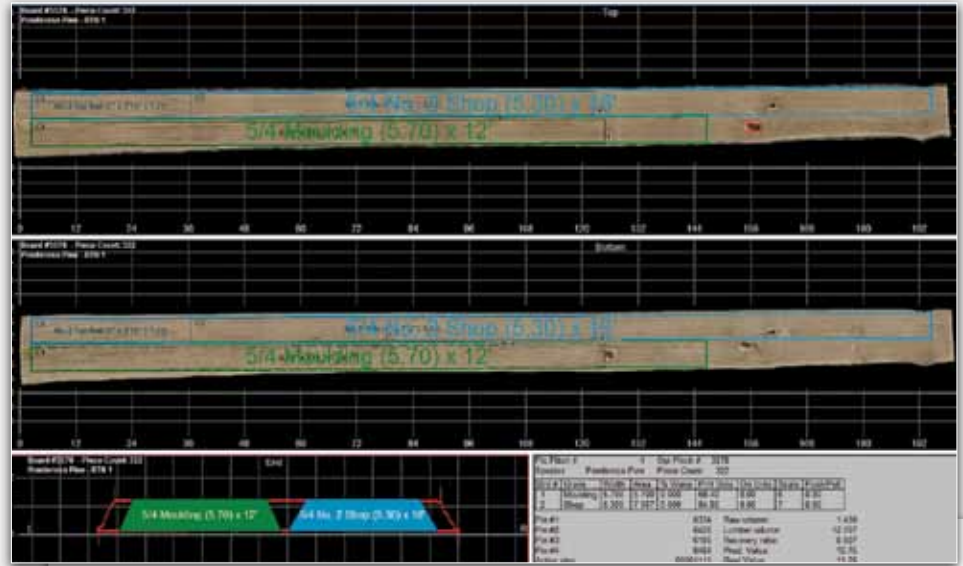
Applications

Beyond the technical aspects of sawmill grade scanning, Scott emphasized the business cases where this technology is suitable. First, know your goal. What is the source of return on investment? What makes a good sawmill grade project? For example, it doesn't make sense to scan for defect at the sawmill trimmer if all of the wood is going through the same drying cycle and on to a planer mill for final grading.

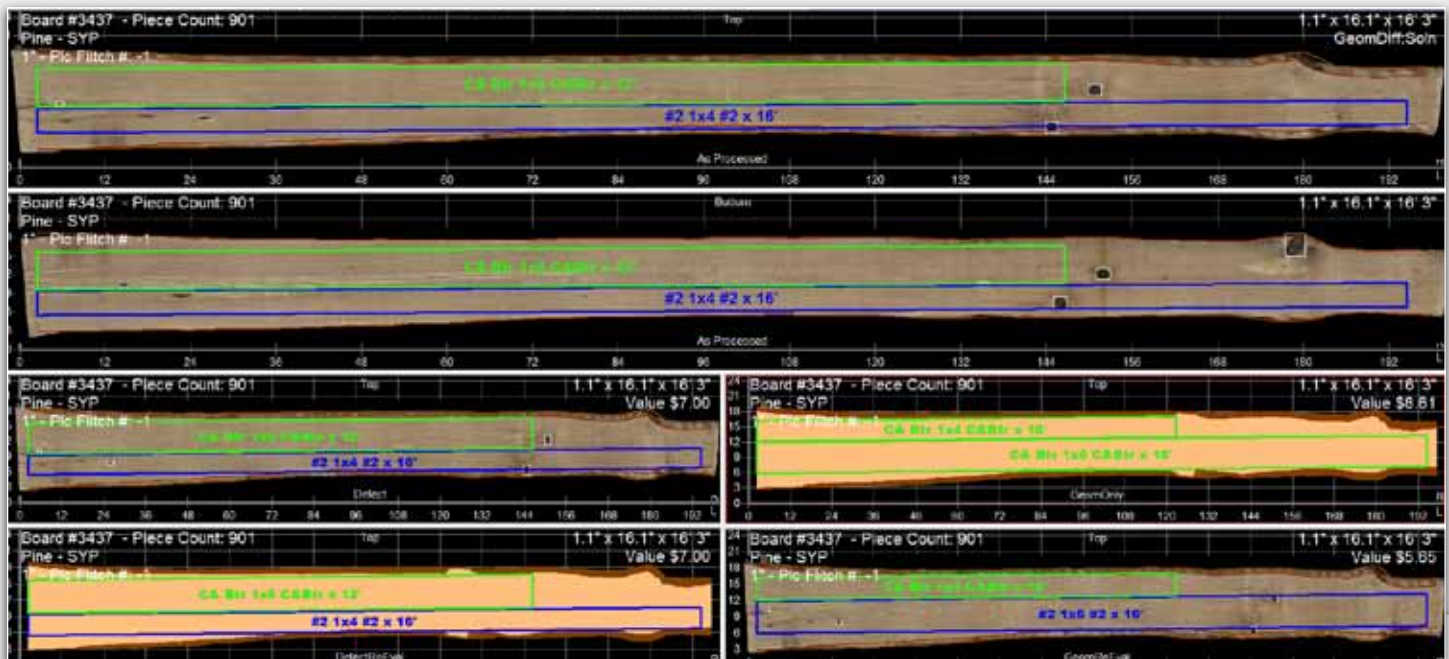
Sawmill grading is harder than planer mill grading, but grading is not always required. The need for grading in the sawmill is dependent on the end product the mill is producing. When grading is recommended the return on investment can be significant, so proper evaluation is key.

Scott explained that USNR looks for projects where there is a key product or market that the mill can target. Then we work with the mill to develop the

best solution. Contact us to learn more about what grade scanning can do for your operation at 800.BUY.USNR, +360.225.8267 or info@usnr.com.



Example of an Industrial Shop solution maximizing the recovery of high value moulding products at a board edge.



Full evaluation of 1/4 edge flitch: A typical geometry-only edger optimizer would have projected a high grade 1x4 and a high grade 1x6, but visual defect information shows that actually only a #2-1x6 and a high grade 1x4 would be recovered. The solution generated using defect information implements a higher value solution by making a high grade 1x6 with a #2-1x4.



INDUSTRY'S MOST ADVANCED VENEER DRYER SYSTEM

This technology session was presented by Tim Fisher, Business Development Manager for USNR's Veneer/Plywood business. Tim discussed the history and development of several technology advances in veneer drying. Processors who have applied these technologies are reaping the benefits of reduced operational costs and greater efficiency, improved product quality and reduced emissions.

USNR recently won an award for its veneer dryer innovation. See page 13 for information.

ADEC development

Exhausting dryers at the lowest temperature point during the process dramatically improves the thermal efficiency of the dryer. This concept has evolved since its inception. Because the lowest temperature point (wet end of the process) also equates to a high level of moisture evaporation, a wet end seal section located at the infeed to the main dryer section is one of the key design elements. This single point exhaust (SPE) feature allows the system to pull all the process air from the dryer to one region to be exhausted. This patented concept has been coined Automatic Dryer Exhaust Control (ADEC). Dryers

equipped with the ADEC system have been proven to increase productivity, reduce thermal energy requirements and reduce exhaust flow.

Results of adding an ADEC system to your dryer

- ▶ 10-15% Exhaust flow reduction
- ▶ 5-10% Thermal energy reduction
- ▶ 8-10% Productivity increase

Key design elements

A secondary heating system in the wet end seal (WES) section maintains a high temperature as the gasses are mixed, thus ensuring that the volatile organic compound-laden gases (VOCs) remain in gaseous form as they are exhausted from the dryer. This also alleviates pitch build up. Temperature data gathered at the top of the WES section, the point of air intake from the dryer section, and the point of ambient air intake from the plant, allows the ADEC system to precisely control the amount of heating of the air mixture inside the WES section prior to exhaust. This is key to maximizing thermal efficiency.

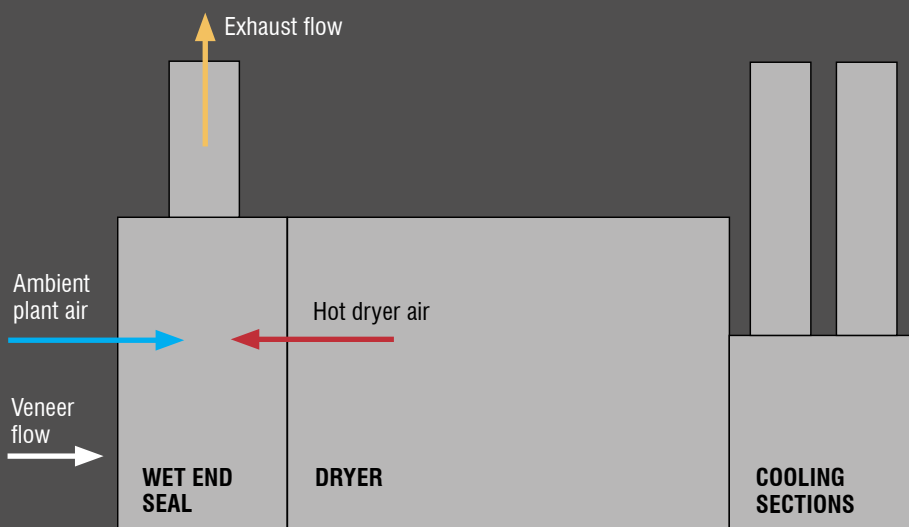
Achieve greater benefit with Cooler Pressure Balance

- ▶ Improves control of dried veneer temperature
- ▶ Reduces VOCs in the cooler vent
- ▶ Reduces pitch build-up in dryer / cooler sections
- ▶ Further improves thermal efficiency

Another key element to optimizing dryer operation is the control of the cooler exhaust volume, to minimize the flow of heated air from the dryer into the cooler section, or cooler air into the hot dryer. This patented Cooler Pressure Balance (CPB) system further helps to maximize thermal efficiency, minimizes pitch buildup which reduces maintenance and cleaning, and allows for automatic veneer temperature control into the dry veneer stacking process.

Pressure sensing manifolds accurately measure the pressure in the last heated dryer section and first cooling section. Any pressure difference commands a change in the cooling section exhaust fan speed. The effect is a near zero pressure differential between the dryer and the first cooler section.

WHAT IS ADEC, AND HOW DOES IT WORK?



- ▶ Maximize productivity
- ▶ Maximize veneer quality
- ▶ Minimize exhaust volume
- ▶ Reduce thermal energy requirements
- ▶ Reduce hydrocarbon build-up
- ▶ Improve working environment

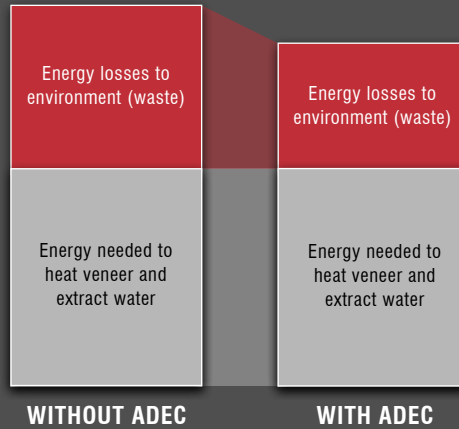
ADEC allows automatic control of the total dryer exhaust volume, and maximizes the thermal efficiency of the process. Based on set values, ADEC uses the temperature differential between the ambient plant air and the wet end seal section to adjust the main dryer exhaust damper. This, in turn, exhausts more or less air volume from the dryer section. The exhausted air is then directed through a duct to the plant's pollution abatement equipment.

The temperature differential is also a true indication of the exhaust requirement of the dryer. When the wet end seal temperature rises above a control set point, it indicates that pressure (air volume caused by evaporation of water from the veneer) is increasing in the dryer, and vice versa. ADEC continually adjusts the exhaust flow to prevent fugitive emissions and over-exhausting the dryer, while also maximizing the absolute humidity within the dryer.

PATENTED SOLUTIONS

USNR holds the exclusive patents for these developments. To learn more about optimizing your veneer drying process with our systems, please contact us at 800.BUY.USNR or info@usnr.com.

DRYER ENERGY USAGE



With ADEC, heat that would otherwise be lost to the environment is recaptured and used to perform productive work, resulting in a more energy efficient process.

ADEC reduces the amount of waste energy for a typical installation by 25%.

Actual	385
Setpoint	400
Output	67 %
Humidity	70 %
Flow	104 SCFM

Actual	391
Setpoint	400
Output	80 %
Humidity	73 %
Flow	104 LB/HR

Actual	378
Setpoint	380
Output	66 %
Humidity	60 %
Flow	103 LB/HR

Actual	110
Setpoint	101

395	348
-----	-----

391	333
-----	-----

378	265
-----	-----

Actual	0.31
Setpoint	0.30
Damper	100 %

ENABLE STEAM TO DRYER (Press for 2 Seconds)
START STOPPED

Sequence Start All Fans
ON STOP

Set Process Time
7.40

Speed Control
MANUAL

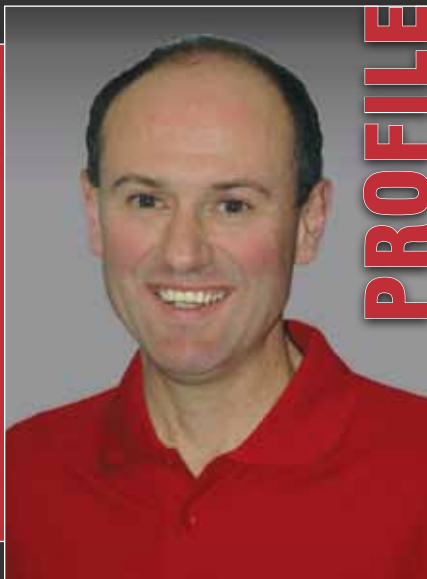
Actual Process Time
7.40

DRYER DRIVES
ON STOP

The main dryer control screen shows the status of the various dryer control design elements that work together to maximize productivity, minimize thermal energy usage, and minimize pitch build-up and maintenance requirements.



Millwide INSIDER is printed on recycled paper.



Martin Vaillancourt is an Account Manager for USNR, based at Plessisville, Quebec.

Martin began his career with USNR (then Forano) in 1998 at Plessisville. His prior industry experience started in 1991, and since that time he has held roles in parts and conversions sales, training, and as a field

service technician supporting primarily debarkers, chippers, bandmills and carriages. In 2004 Martin transitioned to capital equipment sales.

About his current role, Martin says, "I like working with our customers, and finding solutions to their problems." He also noted that he enjoys being part of the strong team that is USNR. With so many talented, experienced individuals, he said, "It's great to be on such a winning team."

Martin is an avid sports enthusiast. A runner for over 25 years, his specialty is the 10-km run, and he completed a half-marathon in October. His goal is to run a marathon in 2013. Another sport dear to him is hockey. He's waiting for the new Nordiques team, but until then he's a Pittsburgh Penguins fan.

Martin is a proud father of 2 young daughters who also love sports, specifically figure skating, running and biking.

UPCOMING EVENTS

FEB. 5-7
IHLA
Indianapolis, Indiana

MAR. 11-13
HMA
Charleston, South Carolina

MAR. 13-15
Small Log Conference
Coeur d'Alene, Idaho