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**Leaping Forward**

Collins Pine makes a major move, installing the latest technology at its high grade random length and width mill fed by a certified forest. By Dan Shell  
 September 2003

CHESTER, Calif.

The newly renovated Collins Pine sawmill here is the kind of place where 20+ in. cants are regularly produced at the headrig, and where the small log line handles diameters well into the 20 in. range. At this random length and width cutting mill, new equipment and much-needed automation and optimization are making the facility more productive, efficient and competitive.



**Pierce Ward**

With the new mill, Collins Pine and the mill's employees took a three decade technological leap almost overnight, going from manual infeed, laser alignment machines to the latest in scanning and optimization technology.

Construction on the new mill began in early '01, with the new structure going up around the old one. The old mill ran until December '01, and the project included replacing all equipment from debarker infeed to the existing trimmer/sorter line. Collins Pine engineer Larry Ostman coordinated the design of the new mill, with help from Bob Reynolds Engineering. Erection companies for the project were BMI, O&S Construction and Batcher Bros. Construction, who worked with Murray Electric and local contractor Hasbruck Construction. Hydraulic Technical Services handled hydraulic installations. John Detroit and Ken Banes, respectively, were the mechanical and electrical project managers.

Key vendors for the project were Timber Machine Technologies, which provided a curve-sawing gang and innovative, random width board edger; MAC Equipment, which supplied a first-of-its-kind, C-frame top dog center carriage system that feeds a set of chip heads and a twin band (as opposed to circle saws); Perceptron, which provided four scanning and optimization systems: 3D Smart TriCam scanning and optimization on the edger and gang, and 3D Laser scanning and optimization packages on the mill's rebuilt headrig and small log C-frame



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system (and also a Dynastar maintenance program that's just now being installed); and Concept Systems, which performed all controls and machine center integration work, including Allen-Bradley ControlLogic PLCs and ethernet-based communications.



Additional suppliers include Key Knife, with knife systems used on all chipping head hubs; Wagner, which supplied its new Apex moisture measuring system at the planer mill; Wellons, which supplied three new kilns and computerized control systems; and Linden, which provided a step feeder at the C-frame.

Maxi Mill provided extensive design work on the new mill's slanted twin resaw, Newnes performed a major sawmill trimmer optimizer upgrade, and Nicholson handled installation and startup of the debarker, which was relocated from another Collins facility.

Key to the project was the ability for the new mill to handle a variety of species and a huge range of log diameters--from 6-60 in.--while producing random lengths up to 20 ft. and widths to 23 in.

"It's been an interesting challenge in dealing with the range of log diameters we have, and in developing cutting parameters that allow us to get both production and grade and still meet market demands," says Mill Manager Mike Zojonc. "A bigger challenge is in the (optimization) software. It's complicated, but to do what we want it to do, it has to be."



The renovation has led to a big jump in production: While the old mill produced roughly 60-70MMBF annually, the new one will do 120MMBF. But the learning curve has been a steep one, as employees familiarize themselves with the new equipment.

"It was pretty slow going at first, and it took us awhile getting up to speed with the new technology," says sawmill supervisor Pierce Ward, adding that the learning curve included not only new production technology, and its automated processes, but also training for new maintenance and safety concerns.

As of mid July, the mill was hitting more than 200MBF/shift on the pine species and had been over 300MBF/shift several times on white fir. "There are still some peaks and valleys, but we're starting to get into a good flow pattern and the issues are becoming fewer and fewer," Ward says. "The pressure is now moving more downstream to the sorter, trimmer and planer."



Collins Pine personnel are

in the process of developing a three-year strategic plan. "Though we haven't had a lot of time to look at future projects, as mill production increases we'll have to make some more improvements," Zojonc says, adding that the planer mill and cogeneration plant are the areas next in line.



## Mill Flow

The mill cuts a variety of species, including Douglas and white fir, ponderosa and sugar pine and incense cedar. Due to the company's uneven-aged management practices on its nearby Almanor Forest, the mill handles logs from 6-60 in. A LeTourneau log handler performs



truck unloading, while Cat 980 wheel loaders handle sorting duties and feed the mill and a Cat 235 decks logs.

Logs from Collins' timberlands are weight sampled; outside logs are all roll-out scaled by the Southern Oregon Timber Scaling Bureau. Logs are sorted by species--and as

certified or non-certified. "Certified wood has to be sorted and tracked all the way to the planer," says Ward. "The chain of custody is tight all the way through the process."

He adds that the mill may run a week or two of certified wood at a time, depending on sales orders. Tracking certified wood through the mill "is easier than it sounds," Ward says. "It's easier to switch between certified and non-certified wood than to switch species." (Roughly 60% of the new mill's output, at full capacity, will be certified.)

At log infeed, logs first encounter a rebuilt swing-type cutoff saw and a rebuilt Nicholson A4 debarker that can handle logs up to 35 in. (An older Nicholson unit that can handle logs up to 60 in. is kept off-line for oversize logs.) Exiting the debarker, logs pass through an MDI metal detector and under a Banner diameter scanner and flow toward the headrig infeed. Just prior, a rotary kicker sweeps 24 in. and smaller logs to the C-frame infeed.



Logs sawn at the headrig encounter a Perceptron scanner and optimizer, which is predominantly working off parameters choosing the highest value products. Headrig is a rebuilt carriage with new Forano knees feeding a rebuilt CM&E chipping head with Key Knife hubs and a 7 ft. Letson-Burpee bandmill. (Key Knife systems are used throughout the mill in chipping applications.)

The headrig is primarily breaking logs down for the resaw, with the

machine performing as many one-pass cuts as possible to enhance production. Larger logs have to be sawn to 26 in. to fit into the resaw and gang. Multiple boards all flow to the resaw; cants are routed to the gang. The resaw, a 5 ft. Letson Burpee twin unit rebuilt by Maxi



Mill and mounted at a 27° slant, has a runaround to perform multiple cuts, and all material exiting the resaw goes to either the gang or board edger.

Logs at the C-frame infeed are singulated with a Linden step feeder and pre-scanned at the top of the feeder for diameter and length to set the C-frame dog. Placed on a set of turning rolls and rotated, logs are then scanned for final sawing solution.

The C-frame unit feeds a twin band machine center (rebuilt Letson-Burpee 5 ft.) preceded by rebuilt CM&E chipping heads. The Perceptron optimizer here is also set to extract maximum value, and with operator input the system is able to pick out higher-value grades.

According to MAC Equipment personnel, the C-frame unit, called a Top Dog Center Carriage System, is the first top-dogging unit feeding a chip head/twin band ever installed. The unit is much taller than standard MAC top-dogging carriages and features extra long dogs due to the larger logs and need to get the working part of the carriage above the bandmills' radius.

The C-frame produces cants from 4-12 in. At outfeed, combination boards are routed to the twin resaw, single boards to the board edger and cants to the TMT curve-sawing gang.

With a 25 in. capacity, the curve-sawing gang features multiple saw banks for cutting a variety of products. Machine center is a 12 in. double arbor unit, with two-positioning base that allows for slew and skew based on Perceptron scanning and optimization information. Again, operator input allows the optimizer to saw higher grade material.



**Shipping forklift driver Bob Wharton, left, and Mill Manager Mike Zojonc**

"I thought the new gang was going to be difficult and we'd have some problems with it, but it's been running real smooth," Ward says. "It's a nice machine; the filers have really taken ownership of it."

The board edger is a four-saw, top head unit capable of cutting boards from 4 to 36 in. To perform system overrides on high grade lumber, the operator has 42 grade entry buttons that allow defect cuts and



provide the ability to direct the optimizer to use different grade rules for different parts of the board. Though the feature hasn't



been used yet, the unit is also capable of handling and developing trapezoidal "industrial grade" board solutions that keep more high-grade lumber in one piece.

Saws are provided by Pacific/Hoe and Simonds. Stellite\* tips are used on all band saws and on board edger saws. Carbide saws are hand-tipped, while Stellite is applied with a Wright tipper.

Band saw equipment includes Armstrong #4 and #6 grinders, a Vollmer Alligator auto leveller and Armstrong Equalizer side dresser. Round saw equipment features Vollmer face and side grinders and a Wright top grinder. Nickel babbitt guides are milled on an IMW guide machine.

Saw runs are four hours on the bands and eight hours on the gang, while edger saws are changed as needed. According to head filer Jim Newland, the mill's filers recently purchased a new lot of stainless steel saws from Cal Saw & Knife. "We're experimenting with stainless saws and a new stepped-down tooth design, looking for kerf reductions," he says.



Exiting the edger and gang, lumber flow converges upstream of an Irvington trimmer (Newnes scanning and optimization) and a Newnes 75 bin J-sorter feeding a Lunden stacker.

Taylor forklifts perform lumber handling, feeding both the kilns and planer mill. The mill's drying capacity includes three new Wellons units, each equipped with computerized controls, and 11 older steam kilns. (A small amount of fir is sold green.) Kilns are steam heated from an on-site cogeneration plant that makes the mill fully energy self-sufficient (although some agricultural waste from the Sacramento Valley is brought in to lower moisture contents). The mill also sells power on the open market.

Entering the planer mill, lumber moves via Newnes lug loaders and flows across a Wagner Apex moisture meter and lumber dropout system before encountering a Stetson-Ross high speed planer feeding an Irvington trimmer. Lumber is pulled on a dry chain, then sent to a packaging and strapping station.

"Basically, we can make anything you want," Ward says of the mill, which produces some of the finest high-grade, tight grain pine products the industry has to offer. Items manufactured include 4, 5, 6 and 8/4 lumber, dimension, commons, high- and low-grade industrial material, including timbers, even slicing flitches, all in lengths up to 20 ft., from 4-23 in. wide.

## Collins' Commitment

**T**he new Collins Pine sawmill represents a major, \$20 million commitment to the tiny town of Chester in northeast Calif. The company has been a major economic presence there since 1943, when the first log was cut at the then-new Collins Pine Co., now a part of the Portland, Ore.-based Collins Companies.

According to Collins Pine Mill Manager Mike Zojonc, "We are committed to providing a stable economy for this community for decades



to come." In addition to the new manufacturing facility, Zojonc cites the company's 12 megawatt cogeneration plant, which powers the mill and produces almost enough power to meet all electricity demand in Lassen and Plumas counties (Excess power is sold to Pacific Gas & Electric.), and the company's renowned Collins Almanor Forest (CAF), which provides 45% of the new mill's log supply.

Eric Schooler, President and CEO of The Collins Companies, says the Chester mill project, plus improvements at other company sawmills in Oregon and Pennsylvania, reflect the organization's commitment to operating in a sustainable--and profitable--manner, with its eye on the long term.

In 2005, the Collins Companies will attain 150 years as a family owned forest products business, Schooler says, noting Collins' reputation for sustainable forestry. "We need to follow through with operations that also have a reputation for maximizing the recovery of products from our forests," he emphasizes. "As we look forward to the next 150 years, we must be a truly sustainable enterprise, and to accomplish that means having competitive, efficient and high recovery operations."

The CAF's 94,000 acre mixed conifer stands of the Collins Almanor Forest (CAF) were the first privately-owned timberlands in the U.S. to be independently certified by the Forest Stewardship Council (FSC) through the only worldwide certification system endorsed by the major environmental organizations.

Today, all three of Collins' hardwood and softwood forests are FSC-certified, including the Collins Pennsylvania Forest and the Collins Lakeview (Oregon) Forest. Each forest feeds mills that manufacture certified hardwood and softwood lumber and hardwood veneer and flooring. In addition, Collins Products LLC manufactures certified pine particleboard and exterior siding and trim.

The Collins Companies is family-owned and traces its roots to 1855 when T.D. Collins began operations in Pennsylvania. By the turn of the century, the family expanded west and in 1940 began its long-term commitment to a little town in northeast California. In addition to the new mill in Chester, the company manages timberland and milling operations in Lakeview, Ore. (Fremont Sawmill), Kane, Pa. (Kane Hardwood), Klamath Falls, Ore. (Collins Products LLC) and three retail yards in northern California (Builders Supply).

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