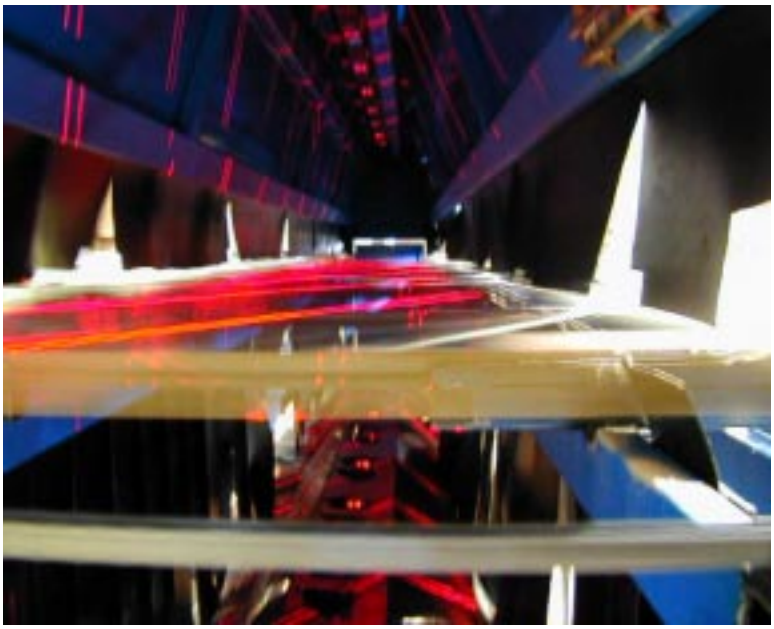
PERCEPTRON
Forest Products Division

Perspectives

Trimming gets results with the new generation Smart TriCam

June 2000

Perceptron manufactures the new Smart TriCam laser triangulation sensor used in Edging and Trimming applications. This sensor is unique because it provides a truly 3-dimensional view of the board's surface. Utilizing a dual laser line that washes across the piece, this transverse TriCam is able to scan the entire surface of the board with no laser gaps in the data. This scanning sensor produces extremely dense data for more complete modeling than laser point scanners.



It's online and being used on a trimmer system in Ireland, running 117 lugs per minute. "Most optimized trimmers run from 90-100 lugs per minute," says Jeff O'Dell, product manager for the Perceptron Trimmer System. "It is significant to note that European mills typically saw lumber based on visible wane rules, as opposed to the board-in-board logic common to most North American mills."

Board-in-board logic measures and models the geometry of a piece of wood and then fits planed products into that 3-dimensional image. This means that shrinkage factors and planer allowances are included when the dried and planed products are fit into the green lumber, such that an accurate representation of the wane on the finished product is possible. "European-Style mills (including many in South America) sell their products kiln-dried, but not planed. Other mills in drier climates often only air-dry their products. In cases where the products are not planed, we don't have the luxury of applying a shrinkage allowance or other deviations between the green lumber and the finished product, so we must maintain a high level of accuracy in both the scanning and the modeling to support the more stringent 'visible wane rules' sawing method," says O'Dell.

Many export products made in North America require either

Continued

6/00 ~ PRINTED IN U.S.A.

Trimming - from front

square edge or very small pencil wane. Modeling wane that typically represents a total of a ¼ of an inch is a challenging process, but this technology has made it possible.

The new Smart TriCam sensors have a wide field of view and are arranged at an angle that captures multiple frames as each piece is conveyed through the scan zone. As a piece enters the scan zone, the sensors image the leading edge to measure that edge, regardless of the wane angle, whether it's shallow, steep, or square-edged. As the piece exits the scan zone, the sensors image the trailing edge. Multiple frames are captured as the piece is conveyed through the scan zone, allowing both edges and both faces to be completely imaged and measured.

The system employs a true differential scanner, meaning that the sensors are mounted on top and bottom. This design provides the same system performance whether a piece is conveyed wane-up or wane-down, making "wane-down" a non-issue, provided the piece will convey through the machine. The worst face is displayed on the optimizer computer screen.

To contrast TriCam line sensor technology with spot sensor arrays, we've selected for comparison a sensor with spots every 2 inches along the longest axis, as those are quite common. This means that the distance from spot to spot along the length of the piece as it's conveyed through the scanner is 2 inches. As it's imaged, the piece is either on a spot or it's not, and one cannot know it's exact location if it falls in between. If a piece is a tenth of an inch beyond a spot such that a particular spot falls on the end, it cannot be determined if the next spot is a tenth of an inch, or ½ inch or 1.9 inches beyond the physical end of the lumber, so there's some uncertainty as to the actual overall length.

The Perceptron Trimmer Optimizer system not only measures the length of a board to 1/8 of an inch without additional hardware, but can also model the end of that board very well. Other user defined software parameters that allow you to have extra end requirements include: exact saw locations in the trimmer, actual bucking lengths, optimizer minimum product length allowed, compound wane rules, planer mill trimmer limit switch locations and cosmetic trimming, to name a few.

June 2000

New installations of Perceptron scanning and optimization systems

- **Scierie Adrien Arsenault Ltée** in conjunction with **Syst-M** has recently installed 3-D TriCam scanning and optimization on the Sawquip curve sawing canter line in Balmoral, New Brunswick.

- **Hood Industries** has installed a headrig Carriage optimizer with LASAR scanning in the Coushatta, LA mill. This makes their second Perceptron installation at this location.

- **Crown Pacific** of Port Angeles, WA has installed 3-D TriCam scanning and optimization on the canter line through **Syst-M**.

- **Rayonier** of Swainsboro, GA has upgraded their USNR double length infeed from 2-D to 3-D TriCam scanning with auto rotation. This replaces Opcon 300 light curtains.

- **Domtar** of Grande Remous, Québec in conjunction with **Syst-M**, has installed a TriCam scanning and optimization system retrofitted onto an existing Denis Comact edger.

- **GDS** has recently installed three Perceptron systems in conjunction with **Syst-M**. The mill in

Continued

New installations continued

Pointe à la Croix, Québec received a Sawquip edger system with TriCam lineal scanning and optimization. Both Pointe à la Croix and Grand Vallee, Québec locations have installed Carbotech trimmers with transverse TriCam scanning.

- **The Pas Lumber** of Bear Lake, British Columbia recently started up a single zone TriCam sharp chain (RBS) system and will soon be starting up a transverse TriCam canter system.

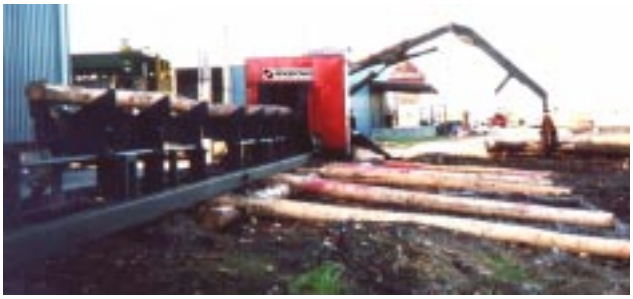
- **Hankins, Inc.** of Ripley, MS in conjunction with **Optimil**, has upgraded their USNR double length infeed from 2-D scanning to a dual scan zone, 3-D TriCam scanning system with log optimization. This new system replaces Opcon 300 light curtains.

New orders for Perceptron scanning and optimization

- **Riley Creek Lumber** has ordered 3-D TriCam scanning with log optimization and auto rotation for their new **Optimil** double length infeed system at the Laclede, ID mill. They've also ordered the first ever saw accuracy verifier which rescans the log after it's passed through the chip heads to verify that the opening faces are accurate.

- **Moore Lumber** of Alapaha, GA in conjunction with **Cone Machinery** has ordered TriCam lineal cant scanning with transverse positioning on their fully optimized gang. The mill also purchased a transverse two saw edger system with strip save capability.

- **Ashley-Coulter** of Boisetown, New Brunswick has run a stem study using the new portable scanning system from Perceptron to ascertain which capital improvements should be made in their mill.



Portable log study system

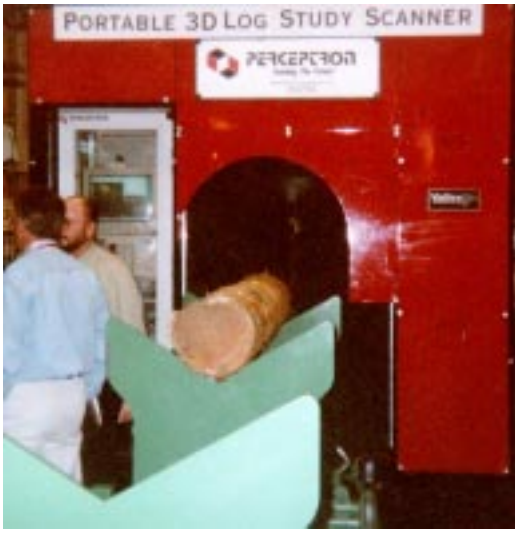
- **North Florida Lumber** has purchased a LASAR scanning and optimization system for the bucking line in the Bristol, FL mill. **ASM** is providing the sharp chain for a new 3-D TriCam scanning and optimization system at the primary breakdown center.

- **Sundance Forest Products** has purchased a TriCam scanning and optimization system for the Soderhamns modified twin and canter lines at the mill in Edson, Alberta. Sundance has also bought the MillExpert system that models the entire process line from a single scan zone using only one software package and one computer.

- **East Alabama Lumber** of Lafayette, AL has ordered a complete Perceptron mill wide solution. The mill will receive LASAR scanning and optimization on the bucking line and upgrade the sharp chain from 2-D to 3-D LASAR scanning. LASAR scanning and optimization will also be installed on the headrig Carriage. A saw accuracy verifier will be implemented at the cant station to verify the accuracy of opening faces. Fine tuning of the Ultrasonic Cant grading system is ongoing. Two 20' edger systems will be optimized with transverse TriCam scanning as well as the 20' trimmer. East Alabama Lumber will also receive the Perceptron Mill Controller for mill wide networking.

- **Vanderwell Contractors** of Slave Lake, Alberta is adding a six bin true shape pattern sorter with auto rotation to their 2nd Hewsaw single processor canter line. The mill performed an identical Perceptron upgrade on their 1st Hewsaw line two years ago.

- **Weyerhaeuser Company** of Aberdeen, WA has placed an order for an **Optimil** double length infeed with TriCam scanning and log optimization with auto rotation.



Now booking Perceptron log and stem studies

Find out which capital improvements will yield the most results in ***your*** mill with a Perceptron log or stem study. Perceptron's portable scanning unit comes to your millsite ready to begin collecting data on your logs and stems. You'll receive a report that makes evaluating uplift easy.

Now booking space for September through the end of the year. Call today (800) 849-1951 ext 230.

Perceptron, Inc.
PO Box 90927
Atlanta, GA 30364
www.perceptron.com