Optimization From Bucking to Grading

Our comprehensive suite of integrated optimization systems harnesses technology to create innovative solutions that satisfy today’s requirements and set the stage to meet the challenges of tomorrow.

Integration is Key to Success

Newnes-McGehee (NM) is proud to offer a comprehensive suite of optimization solutions for every machine center in the process. NM’s history in optimization spans over 20 years with more than 700 optimized systems operating world wide. Integration is a key element to our success. As an OEM to the solid wood processing industry, NM manufactures and supplies complete systems that comprise mechanical, controls and optimization. Today we have systems operating in North and South America, Europe, Russia, the British Isles and Australasia. NM optimization is designed to focus on value, recovery, throughput and reliability, to help you keep pace and effectively compete in a global marketplace.

Benefit of a Single Supplier

Offering a wide range of optimization allows commonality among technologies and a common user interface. Our customers benefit by more accurate and precise optimization solutions, a more diverse feature set, better support and service, fewer required critical spare parts and reduced training. Systems that “speak the same language” mean less downtime and fewer errors. The modularity of our systems provides virtually limitless opportunity for upgrades; once you make the initial capital investment you can count on the ability to keep pace with technology through future upgrades and enhancements.

NM develops and manufactures many of the sensors and components that go in our optimization systems. This allows us to continuously enhance proven technology, and leverage it across various machine centers and processes. It also ensures control of quality and less frequent obsolescence.

Our large installed base means we have more experience than most. Our systems are operating in many markets and under many differing environmental conditions. We are committed to support our systems wherever they exist, through modem and high speed internet connections.

NM optimization is based on knowledge and experience. You can be confident our systems will meet your needs today and for many years to come.
Sawmill Optimization

**Primary Breakdown**
NM primary breakdown optimization incorporates curve sawing and sideboard edge logic algorithms to determine the optimum solution, providing recovery results at the point of best opportunities. The systems are easily configured for all typical machine center/cutting tool applications including double length infeeds and sharp chain systems.

**Auto-Rotation**
Flexible software supports all turner configurations - horns down or fully optimized turning modes for maximum value or volume. The auto-rotation optimizer is available as a stand-alone system to easily retrofit manual turners.

**Small Log Processing**
The small log processor system converts logs to lumber in one pass with a fully integrated machine center. A single linear scanner collects data for auto rotation, primary breakdown, profiling and curve sawing. This optimizer utilizes proven trim, edge and curve sawing algorithms in its breakdown solutions.

**Log Bucking / Sorting**
The linear bucking optimizer is configurable for any application from simple to advanced. The sophisticated logic evaluates solutions to predict the possible products that will result from bucking to trimming. Flexible parameters and custom sorting applications can be set up to accommodate individual log breakdown requirements.
**Cant Curve Sawing**
Proven algorithms provide shape sawing-based volume and value recovery. Our curve sawing gang optimizers are offered in transverse, linear and QuickScan™ configurations. QuickScan allows feeding from either or both sides as well as single or multiple scan zones. With over 100 curve sawing gang optimizer systems in operation, NM is the leader in this technology.

**WinTally™**
The WinTally system is a comprehensive reporting and configuration tool for the management of lumber sorting and production information for sawmills and planermills. Real-time and long term database storage of board and package details, combined with flexible reporting capabilities ensures that production data is both accessible and configurable. With experience based on over 300 systems, WinTally is the most widely used system of its kind.

In the planermill, WinTally is fully integrated with the LHG system, offering monitoring and auditing of your system’s grading performance.

**Trimming**
Reducing over/under trim can produce dramatic results on a mill’s bottom line. For decades NM trimmer optimizers have been providing accurate trim optimization crucial for mill profits. Over 250 of our systems are in operation in mills world wide.

**Edging**
NM edger optimizers are offered in both transverse and linear configurations. The transverse scanner frame is designed with provision for upgrade to BioScan™ capability (see Sawmill BioScan). Over 170 edger optimizer systems are operating in dimension, board, stud, hardwood, grade, shop and high speed edging applications.

**Sawmill BioScan™**
Upgrade your transverse edger or trimmer to the added value of visual defect scanning by adding the BioScan option. This retrofit, available to any existing NM transverse system, enables the detection and control of blue stain, checks, splits and other natural and manufacturing defects. NM brings decades of experience in visual defect scanning to the sawmill.
Planer Infeed Optimizer
Automatically orient for wane at today’s lug rates with patented algorithms in order to maximize grade and value of your planer run. Transverse scanning at the infeed catches drying and transport damage while reducing the need for grading expertise at the infeed. Trimming and drop-out options improve throughput.

LHG - Linear High Grader
Automated grading, MSR/MEL evaluation, and more!
The Linear High Grader delivers fully optimized grading solutions through the patented DataFusion™ approach to defect scanning. DataFusion is the merging, layering and combining of various technologies such as lasers, vision, fiber-based scanning and X-ray. We believe LHG delivers the most consistent control of the grading process, with the highest scan density in the industry. The LHG also offers the most complete MSR/MEL strength classification and defect classification in one compact unit.

The simple, modular design allows the mill to easily upgrade from a basic geometric or MSR scanner to more advanced technologies to achieve a truly automated system that will detect a wide range of natural and manufacturing characteristics for all species.

AddVantage™ Chop and Rip Optimizers
The AddVantage™ was first developed as a scanner to front an optimized chop saw for the rough mill in the secondary or reman industry. It replaces marking by crayons, offers full optimization of fixed and random lengths, and increases value by more precise measuring and grading. The scanner for optimizing the rip process was released in 2006. Both systems provide improved grading consistency and higher value or recovery, yielding less good wood in the waste conveyor.

On the Horizon - Transverse High Grader (THG)
NM’s next addition to its family of grade scanning optimizers is currently under development. Transverse High Grader will meet the needs of wood processors where a transverse automated grading system is required.

Complementary Systems
Grade Mark / ID Reader
Advanced image collection, mark thresholding and noise removal techniques gives the True-Read™ series the highest accuracy rate, lower re-run and off-grade rates than any other grade mark reader system in the industry. The trainable database mark recognition system allows for variations in penmanship, reducing rejected and unrecognized marks.

The LHG utilizes the ID Reader to associate a specific board with its determined grade through a printed code. The ID Reader reads the printed mark allowing correlation of the grader’s decision to the optimizer’s decision, and achieves the best possible cut solution for the board. The ID Reader incorporates the same technology as the True-Read series.

Controls
NM’s experience in controls spans over 25 years across the entire range of sawmill and planermill machine centers. Utilizing the most advanced control hardware available ensures the system exceeds performance requirements, provides flexibility and is supportable through the system’s lifetime. NM controls systems are complemented with user-friendly human machine interfaces that offer operators intuitive machine set-up and troubleshooting menus. Controls systems and upgrades are offered on new capital installations and virtually any brand of existing wood processing equipment.
Integrated Mill of the Future

Future of Integration
The introduction of optimization fundamentally changed the sawmill industry. Optimization continues to evolve with advancing technologies. Future productivity breakthroughs will come from integrated information flows.

The integrated mill of the future will help the wood processor make business decisions based on accurate information utilizing advanced management tools. Enterprise management tools and the internet will allow effective coordination of remote operations from a company’s headquarters.

To take advantage of these advanced tools all optimized systems in a plant must be able to “speak the same language”. Selecting systems from a single vendor can bring the added value of future integration of multiple operations.

Mill Host®
Move your process to the next level of opportunity. Our Mill Host series of products allows managing information and process at the plant level. The Mill Host computer connects all NM optimization and WinTally™ systems, bringing them together on one desktop. Central Point™ modules for sawmill and planermill offer central product set-up, central summary reports, central remote interface and order management.

World Wide Interface
Move consolidated information from the Mill Host to the corporate level through the world wide interface. Get real-time information updates to your corporate office from every Mill Host at all your plants for better tracking and decision making.

MillSim™
Move your “what if?” analysis to the mill wide level with MillSim. Lower the risk of changes, and determine anticipated product mix, value, distribution and recovery as you change key product and configuration parameters.

Common User Interface
We’ve unified our sawmill optimization systems with a common user interface design and functionality. This reduces training and downtime through familiarity between the machine centers. Similar product set-up features increase user confidence and simplify tuning the various optimization systems to work cohesively.

Sensor Technology
Good, accurate scan data has been the foundation of NM optimization for over 20 years. The capability to design, build and integrate our own sensors helped lead to our success. This expertise also allows us to identify and select the highest quality sensors from around the globe. Whether manufactured in-house or out, we offer the best selection of sensors available today, designed to match the varying applications that benefit from optimization.

System Maintenance Program
System Maintenance Program
The System Maintenance Program offers a planned upgrade path for our optimizer software products. NM optimizer products are built with a modular design to support the longevity of your system. Features are continually evolving to meet the demands of the marketplace.

This program of software releases and ongoing service assistance ensures that NM optimizers continue to make cost-effective decisions for years to come.

The System Maintenance Program offers three optional packages:
- Software / telephone support / onsite service
- Software / telephone support
- Software support

Service and Support
Routine scheduled maintenance helps ensure consistent, reliable operation of today’s modern systems. Customers can choose from several comprehensive packages to satisfy requirements for on-site, phone and system software support. NM’s 7/24 service helpdesk is backed by over 25 trained optimization service technicians strategically located throughout North America to serve you.
Technology Provides the Basis for Success through Optimization

**Transverse Scanning**

**BioScan - Visual Defect Scanning**

Scanning, recognition and evaluation of visual defects in the sawmill’s green end is evolving sawmill optimization into a new era. BioScan technology leads the way in accurate, reliable detection of knots, splits and shake, blue stain and others. This technology is available as an upgrade to your existing NM-brand trimmer and transverse edger, or as a new addition to your plant. NM is also developing technology to detect visual defects such as blue stain and spiral shake on primary breakdown systems. The goal is to increase value recovery from every log and ultimately increase confidence in the final grade outturn of the product before it leaves the sawmill.

**LPS3 - Laser Profile Sensor with True Differential Thickness and Width Measurement™**

LPS3 is the latest in our suite of laser profile sensor technology. It is the most accurate and reliable sensor in the field today. No offset or angled “same point” lasers, no multiplexing, no guessing. LPS offers True Differential measurements at 1.5”, 3” or 6” scan density.

**HDPV - High Definition Plan View Sensor**

The High Definition Plan View sensor (HDPV) is the next generation of length measurement tools for transverse optimizers. The HDPV is a direct replacement for NM’s traditional plan view sensor. The HDPV scans at 2000 Hz and collects data to 0.1”. This provides much higher accuracy on overall length and clearer end defect determination resulting from the increased sample rate. Higher accuracy and speed equate to increased recovery and throughput.

**Lineal Scanning**

**LPL - Laser Profile Lineal Sensor**

The LPL sensor is modeled after the lineal profile sensor used in the Linear High Grader, offering extremely high accuracy and speed. LPL applies this precise technology to all sawmill lineal scan systems from bucking through edging. LPL is designed to operate at 450 samples per second at full field of view. This equals a cross-section scan at approximately ¼-inch intervals down the length of the piece at 600 FPM lineal feed speed. Higher sampling rates can be achieved where the field of view can be reduced, such as the lineal curve saw gangs or lineal board edgers. The sensor also achieves very high data point density around the circumference of the piece (approx. 0.035”). This allows the system to very accurately reproduce the geometric shape of a stem, saw log, cant or flitch, producing a more accurate optimization solution.

The LPL sensor also supports a single channel of vision data that can be used in future systems to obtain visual information about surface defects such as knots, stain, splits, shake, cat-face, and bark on stems, saw logs, cants and flitches.

**LPR - 4-Sided Laser Profile True Differential Sensor**

Designed specifically for ultra-high speed planermill grade scanning applications, the LPR leaves nothing to question with measurements every 0.2” down the length of the piece.

**XD-3 X-Ray Sensor**

Patented X-ray technology, the XD-3 sensor provides a 2-D density map of each piece as speeds surpassing today’s fastest planers. Information from the X-ray system is used to identify defects such as knots, rot, pitch streaks and grain pattern.

**Vision Sensor**

NM’s high-speed vision sensor combines state-of-the-art multi-spectral imaging with other proven wood fiber measurement technologies, yielding second-to-none visual data specifically for the lumber industry. Accurately identify the defects in your dressed lumber, such as stain, splits, checks, decay and knots with NM’s vision sensor installed in your planermill grade scanner.

**New and Emerging Technologies**

**Real-Time Log Rotation**

NM is currently developing a system for primary breakdown machines to track a log’s turn in real time, and make incremental adjustments prior to cutting. This technology is in beta test mode at a mill in Western Canada, and is expected to be released in 2008.