From Vision to Value

Advances in Lumber Optimization

From Vision to Value -

TOP 10 LESSONS
1. Don’t Forget the Basics

- Quality Geometric Scanning
- Calibration/testing
- Well maintained positioning and cutting devices.

2. Your eyes are better than any vision system.
3. What does success look like?
4. Know your markets

5. Know your raw material
6. Careful tuning will match products to raw material

7. Do no harm
8. Use multiple technologies

X-ray                                          Grain Angle (ratio)                                        Grain Angle (angle)

Red                                          Trachied                                               Green

Red                                          Green                                                 Geometric
9. Choose a Platform for Growth

- DataFusion technology utilizes data from all sensors to locate and classify defects.

  ![Diagram](image)

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10. Defect scanning has quick payback
Carriage Optimizers

Are all systems comparable?

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Carriage Optimizers may have three basic modes

- Minimum Opening Face (MOF) mode
- Whole-Log Breakdown (BOF) mode
- Optimized Grade Sawing (BOFPLUS) mode
MOF Mode

Benefits

✓ Reduces inconsistencies on opening faces
✓ Maximizes grade out
✓ Operator can override at any time
✓ Builds stacks automatically
✓ Requires front side scanning
✓ Selects Sawing Patterns by Log Diameter
✓ MOFPLUS capability?

MOFPLUS - automatically selects the MOF on a log-by-log basis based on physical characteristics or operator overrides

- smooth, big log with flare
- rough, big log with flare
- knotty log with little taper
- straight, smooth, smaller log
### Whole-Log Breakdown Mode

#### Benefits
- Absolute highest yield possible
- 2% to 10% recovery improvement over conventional light curtain
- Exhaustively fits 3D shape lumber products into 3D shape modeled logs for maximum value and yield
- Accurately predicts lumber yield and value before sawing
- Accurately applies lumber wane rules for all lumber products
- Gives total control over lumber product mix
- Accurately targets specific products for to meet orders
- Tracks specific lumber products for orders
- Well balanced cant faces, wane control, timber centering
- Requires full log scanning (front side and backside)

#### Benefits continued
- **Minimizes saw lines** and improves throughput (cost/cut)
- Accurately models properties of all downstream machines:
  - Kerfs
  - Number of saws
  - Skew limits
  - Machine envelopes
- Requires a minimum of operator training

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Whole-Log Breakdown Mode – *Automatically* classifies log grade based on size and surface features, and allows sawyer to override or change log grade based on biological features.

Optimized Grade Sawing – enhanced Full Log Breakdown with multiple interior fiber zones in the log, BOF$^{PLUS}$
Optimized Grade Sawing – proven in North American hardwoods to increase grade yields 5% or more.

Optimized Grade Sawing – Whole Log Breakdown with interior grade zones and advanced cutting rules.
Targets timbers and ties in the pith. Get the largest timber possible out of low grade logs.

Models 4, 5, 6 and 8 point wane.
Primary and secondary wane parameters.

Does your carriage optimizer allow you to breakdown logs the way "you" want?
Sawyer grades the log and pulls the handle.
Can your Carriage Optimizer quarter saw vertical grained lumber?

Whole Log Breakdown with Whole Log Scanning vs. Lookup Table Sawing with Single Side Scanning
Thank-you

Questions?