PRIMER ON HARDWOOD TREE & LOG GRADING

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OUTLINE / OBJECTIVES

• Basic Terminology
• Defects
• Importance of Quality vs. Quantity
• How to Field Grade Hardwood Trees / Logs
• Hardwood Product Classes based on Log Grade
• $/BF – price per board foot.

• $/MBF – price per thousand board feet.

• **Blocking** – load-bearing and support-bearing dimensional wood and timbers used in general construction, shipping, and transportation.

• **Board foot** – a unit of lumber measurement 1 foot long, 1 foot wide, and 1 inch thick, or its equivalent.

• **Bole** – the main stem or central trunk of a tree; usually the useable, or merchantable portion of the tree.
• **Bolt** – a short segment tree or a short-length log, usually less than eight feet in length; term often used to describe pulpwood- and cordwood-size logs; boltwood length varies by industry and of course varies by mode of transportation.

• **Butt** – base of a tree; or the larger diameter-end of a log.

• **Butt log** – the first 8-16’ sawlog located directly above the stump; sawlogs located above the butt log are often referred to as “uppers.”

• **Butts and Uppers** – refers to the location on the bole from which the sawlogs were cut.
• **Roundwood** – logs, bolts, or other round sections cut from trees for industrial or consumer uses.

• **Sawlog Top** – the point on the bole of a sawtimber tree above which a sawlog cannot be produced. The minimum sawlog top is 7.0 inches DOB for softwoods and 9.0 inches DOB for hardwoods (USDA FIA).

• **Sawlog** – a general category of log meeting regional standards of diameter, length, and freedom from defect, including a minimum 8-foot length and a minimum top diameter inside bark of 6 inches for softwoods and 8 inches for hardwoods (USDA FIA).
• **Scaling** – the process of estimating the volume of wood product in a log or board or stack of logs or boards.

• **Uppers** – term used to describe sawlogs that originate above the butt log; also referred to as top logs.

• **Volume** – amount of merchantable wood product in a tree or log. Volume is most commonly expressed in terms of board feet, thousands of board feet (MBF), cubic feet, tons, or cords.
DEFECTS

• **Scaling Defects**
  - Result in a net loss of solid wood volume
  - Negatively affects total value

• **Grading Defects**
  - Abnormalities or irregularities on a tree or log surface as well as imperfections in the wood
  - Result in a loss of grade or quality
  - Negatively affects total value
## Grading Defects

- Bark surface abnormalities
- Bird peck (caused by yellow-bellied sapsucker)
- Double heart (pith)
- Borer damage
- Frost cracks
- Limbs
- Knots
- Wounds
- Rot
- Spiral grain
- Shake
- Seams
- Splits
- Checks
- Holes
- Bark seam
- Rope
- Sweep
GRADING DEFECTS

- Adventitious bud clusters
- Bulge
- Bumps
- Burls
- Cankers
- Conks
- Epicormic branching
- Pin knots
- Galls
- Mineral
- Grease spots
- Gum
- Soak
- Borer damage (holes)
- Pin worm
- Insect tunnels
- Spider heart
- Ring shake / windshake
COMMON DEFECTS

shake and beginning of spider heart in oak

pin knots (i.e., suppressed dormant buds in walnut)
COMMON DEFECTS

- butt scar, decay, and cull in green ash; river bottom area
- ring shake in red oak
COMMON DEFECTS

bird peck in walnut

bird peck in basswood
COMMON DEFECTS

- Bark wire in walnut
- Nectria canker in sassafras
COMMON DEFECTS

- fire scar and decay in black oak
- gum spot in cherry

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WHAT LIES BENEATH?

Source: Purdue's Hardwood Lumber and Veneer Series, FNR-287-W
Hard maple is one of our hardest, most uniformed grained and valuable species. The species usually has wide, white sapwood and darker brown heartwood. The white sapwood is the valuable material which also discolors easily.

Boards 1 and 2 are characteristics of flat sawn, white stock. Board 2 shows several pith flecks near the top of the board.

Board 3 shows some curly pattern. Maple can be curly or fiddle back, have a bird’s-eye pattern or occasionally be quilted. Heavy figured is very desirable but just slight figure can be a problem in some stock items as it distracts from maples typical uniform pattern.

Board 4 shows excess dark mineral streaks.

Boards 5 and 6 show numerous defects and the dark reddish brown heartwood.

Board 7 is cut from the center of the log or quarter sawn. The pith is in the center of the dark streak, and some ray fleck can be seen near the center and on the left edge of the piece.
LOG DEFECT = LUMBER DEFECT

Figure 1.—Gum lesions and associated internal defects.

Defect size .......... 3 x 2 inches
Log diameter .......... 18.6 inches
Log diameter at defect .......... 19.9 inches
Flitch thickness at defect .......... 8.9 inches
Slab + round-up thickness at defect .......... 1.3 inches
Log position ............ butt log

Depth below—
Log surface
1.3 inches
First sheet of veneer
0.0 inches

Source: Rast 1982; Research Paper NE-511
WHAT LIES BENEATH?

Source: Rast 1982; Research Paper NE-511
WHAT LIES BENEATH?

Source: Rast 1982; Research Paper NE-511
LOG DEFECT = LUMBER DEFECT
WHAT LIES BENEATH?

Source: Rast 1982; Research Paper NE-511
WHAT LIES BENEATH?

Source: Rast 1982; Research Paper NE-511
• Quality trees generally produce quality logs

• Veneer can be cut from any hardwood species, including cottonwood!

• Veneer trees are so valuable because the price per unit volume increases relative to diameter and quality
  • All things being equal (hypothetical example):
    • A 22” prime veneer walnut tree might bring $3.50 / bf
    • Whereas a 26” veneer tree/log might bring $6.00 – 8.00 / bf
    • The per unit value changes with size (assuming quality remains constant)
• Grade logs, pallet / blocking logs, and tie logs do not see an increase in per unit value relative to diameter
  • All things being equal:
    • The $/BF for a Grade #1, 20” dbh red oak will be the same $/BF for a Grade #1 28” dbh red oak
      • The per unit value does not change based on size
FACTORS THAT AFFECT QUALITY

• Geographic region
• Soil type
• Site, drainage, elevation, and aspect
• Climatic conditions
• Stand and / or management history
• Log buyers generally know where the better quality timber comes from in their region
GROWTH RATE

• Growth rate, or “texture” is also an important consideration for the highest grade veneer logs
  • Soft texture = slow growth rate
  • Hard texture = fast growth rate

• Black walnut: 6-9 rings per inch acceptable
  • More rings per inch is obviously better
Field grade individual trees using the clear face grading technique.

Each tree is divided into four equal faces – every 90.

Each face is then evaluated based on external defects, such as:

- Bark distortions
- Limb scars
- Bird peck
- Seams
- Live limbs
- Etc.

FACE GRADING TREES

- **1SC** – one side clear; represents one clear or defect-free log faces; lowest-quality sawlogs.

- **2SC** – two sides clear; represents two clear or defect-free log faces; low grade-sawlogs.

- **3SC** – three sides clear; represents number of clear or defect-free log faces; high-value grade logs and veneer logs.

- **4SC** – four sides clear; represents four clear or defect-free log faces; highest-value, premium quality veneer logs are 4SC.

*Figure 17. Dividing a Log into 1/4 Faces.*

Clear Face Grading

Clear face log grading rules are used by many log buyers. Many variations on clear face grading rules exist but, like the Forest Service system, these rules require minimum diameters and lengths for logs. Clear-face log grading rules also divide the log into four equally-sized faces; however, instead of examining the clear cuttings on the grade face, the number of completely clear (defect free) faces are counted. Higher grades require more clear faces. Although no standard clear-face log grading rule exists, figure 5 gives an example of a clear face grading rule.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Diameter</th>
<th>Length</th>
<th>Clear Faces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super Prime</td>
<td>18&quot;</td>
<td>14'</td>
<td>4</td>
</tr>
<tr>
<td>Prime 1</td>
<td>18&quot;</td>
<td>12'</td>
<td>4</td>
</tr>
<tr>
<td>Prime 2</td>
<td>15&quot;</td>
<td>10'</td>
<td>4</td>
</tr>
<tr>
<td>Select 1</td>
<td>16&quot;</td>
<td>10'</td>
<td>3</td>
</tr>
<tr>
<td>Select 2</td>
<td>15&quot;</td>
<td>10'</td>
<td>3</td>
</tr>
<tr>
<td>#1</td>
<td>14&quot;</td>
<td>8'</td>
<td>2</td>
</tr>
<tr>
<td>#2</td>
<td>12&quot;</td>
<td>8'</td>
<td>1</td>
</tr>
<tr>
<td>#3</td>
<td>10&quot;</td>
<td>8'</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes:
- Poplar minimum 20" diameter for Prime
- White oak, Hickory and Beech - minimum length of 10'

Figure 5. An example of a clear face grading rule. Note that this rule is specific to this mill – other log buyers will have different requirements.

* Source: UTK, A Hardwood Log Grading Handbook
• Quality…Quality…Quality

• Timber or log quality, along with species, determines value!

• 5 Basic Tree / Log Grades (significant variation)
  • Prime (Min. DIB and log length; 4SC)
  • Select (Min. DIB and log length; 3SC)
  • #1 (3SC)
  • #2 (2SC)
  • #3 (2SC & 1SC)
LOG GRADING

- **Species**
  - Yes, there are species-specific grading requirements

- **DIB on small end, (i.e., “scaling end)**
  - DIB = diameter inside bark
  - Maximum and minimums (not major issue in Midwest)

- **Log length**
  - Most log minimums are 8’ plus 6-inches of trim
  - 8’6”, 9’6”, 10’6”, 12’6”, 14’6”, etc.
  - Butt log requirement for veneer (varies by buyer)

- **Defects**
  - Number of clear log faces

- **Net volume deductions**
# Example Sawlog Prices

<table>
<thead>
<tr>
<th>Hardwood Saw Log Specs</th>
<th>Prime 16&quot; Dia 3 CF</th>
<th>Select 14&quot; Dia 3 CF</th>
<th>#1 12&quot; Dia 3 CF</th>
<th>#2 10&quot; Dia 2 CF</th>
<th>MAT 1 16'Lgth 10&quot; Dia 0 CF</th>
<th>MAT 2 9,10'Lgths 12&quot; top 0 CF</th>
<th>MAT 3 9,10'Lgths 12&quot; top 0 CF</th>
<th>Pallet 10&quot; Dia/1 CF 8.9&quot; Dia CLEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Maple</td>
<td>$950./mbf</td>
<td>850.</td>
<td>650.</td>
<td>450.</td>
<td>400.</td>
<td>350.</td>
<td>×</td>
<td>300.</td>
</tr>
<tr>
<td>Soft Maple</td>
<td>500.</td>
<td>400.</td>
<td>350.</td>
<td>300.</td>
<td>400.</td>
<td>×</td>
<td>250.</td>
<td>175.</td>
</tr>
<tr>
<td>Red Oak ***</td>
<td>700.</td>
<td>675.</td>
<td>550.</td>
<td>450.</td>
<td>400.</td>
<td>350.</td>
<td>×</td>
<td>300.</td>
</tr>
<tr>
<td>Yellow/Black Birch</td>
<td>650.</td>
<td>500.</td>
<td>400.</td>
<td>300.</td>
<td>400.</td>
<td>×</td>
<td>250.</td>
<td>200.</td>
</tr>
<tr>
<td>Cherry</td>
<td>700.</td>
<td>600.</td>
<td>400.</td>
<td>300.</td>
<td>400.</td>
<td>×</td>
<td>250.</td>
<td>175.</td>
</tr>
<tr>
<td>White Ash ***</td>
<td>650.</td>
<td>600.</td>
<td>450.</td>
<td>325.</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>200.</td>
</tr>
<tr>
<td>Paper Birch ***</td>
<td>300.</td>
<td>300.</td>
<td>250.</td>
<td>200.</td>
<td>400.</td>
<td>×</td>
<td>250.</td>
<td>150.</td>
</tr>
<tr>
<td>White Oak</td>
<td>600.</td>
<td>450.</td>
<td>400.</td>
<td>250.</td>
<td>400.</td>
<td>350.</td>
<td>×</td>
<td>200.</td>
</tr>
<tr>
<td>Beech</td>
<td>×</td>
<td>250.</td>
<td>200.</td>
<td>150.</td>
<td>400.</td>
<td>×</td>
<td>250.</td>
<td>150.</td>
</tr>
<tr>
<td>Hickory</td>
<td>400.</td>
<td>300.</td>
<td>200.</td>
<td>175.</td>
<td>400.</td>
<td>×</td>
<td>250.</td>
<td>175.</td>
</tr>
<tr>
<td>Butternut</td>
<td>500.</td>
<td>400.</td>
<td>300.</td>
<td>200.</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Aspen ***CALL FIRST</td>
<td>350.</td>
<td>250.</td>
<td>200.</td>
<td>110.</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>
# Example Sawlog Prices

**Other Saw Log Specifications:**

- **Paper Birch**
  - MIN length: 8'6". *preferred lengths: 10'6", 12'6".* NO ROT. **MIN** of 2" white wood.
- **Red Oak**
  - Prime, Select and #1: *preferred lengths* 9'6", 10'6", 12'6".
- **White Ash**
  - *preferred lengths* 8'6", 12'6".
- **Hardwood Saw Logs**
  - MAX diameter on butt end: 36". *WhPine Saw Log MAX diameter on butt end 48".*
- **Hardwood Pallet Logs**
  - MAX diameter on butt end: 18".
- **Aspen/Bass**
  - 8'8", 17'6" lengths *only.* MINimum diameter: 10", MAXimum diameter on butt end: 30".
- **Maple**
  - 1/3 heart MAX, except Soft Maple #2 ½ heart max.

**Standard deductions taken for sweep, rot, etc. HW logs out-of-spec paid at $80/m or culled.**
# Example Veneer Prices

## Northeast Timber Exchange, LLC

### Sugar Maple

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| AAA   | 9’6”, 10’6”. 4 sides clear. 1/3 heart max. Butts. | 18” | $6,000.+
| AA    | 9’6”, 10’6”. 4 sides clear. 1/3 heart max. Butts. | 16” | $4,000.00
| A     | 9’6”, 10’6”. 4 sides clear. 1/3 heart max. Butts. | 14” | $3,000.00
| B     | 9’6”, 10’6”. 4 sides clear. 1/3 heart max. Butts. | 13” | $2,000.00
| VP    | 9’6”, 10’6”. 4 sides clear. 1/3 heart. | 14” | $1,400.00
| V1    | 9’6”, 10’6”. 4 sides clear. 1/3 heart. 14” 1 defect. | 12” | $900.00
| V2    | 9’6”, 10’6”. 4 sides clear. 1/3 heart. 12” 1 defect. | 11” | $850.00

### Almost no gum allowed

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| AAA   | 9’6”, 10’6”. No gum. No defects. Butts. | 18” | $3,000.+
| AA    | 9’6”, 10’6”. No gum. No defects. Butts. | 16” | $2,000.00
| A     | 9’6”, 10’6”. No gum. No defects. Butts. | 14” | $1,500.00

### Red Oak

<table>
<thead>
<tr>
<th>Grad</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| AA   | 9’6”, 10’6”. Clear. Slicer quality. Butts. Centered heart. | 16” | $1,400.00
| A    | 9’6”, 10’6”. Clear. Slicer quality. Butts. Centered heart. | 15” | $1,200.00
| B    | 9’6”, 10’6”. Clear. Slicer quality. Butts. Centered heart. | 14” | $1,000.00
| VP   | 9’6”, 10’6”. Clear. Butts. Centered heart. | 14” | $850.00
| V1   | 9’6”, 10’6”. 4 sides clear. Butts. Centered heart. | 12” | $700.00

### White Oak

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| AA    | 9’6”, 10’6”. 4 sides clear. No pins. Butts. | 16” | $800.00
| A     | 9’6”, 10’6”. 4 sides clear. No pins. Butts. | 14” | $600.00

### Butternut

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| A     | 8’6”-16’6”. 4 sides clear. | 14” | $600.00

### Hickory

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| V1    | 9’6”, 10’6”. 4 sides clear. | 12” | $700.00

## Veneer Price List

### March 1, 2016

### Paper Birch

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| VP    | 9’6”. 4 sides clear. Sound heart. No worm track. | 14” | $1,000.00
| V1    | 9’6”. 4 sides clear. Sound heart. No worm track. | 12” | $700.00

### Yellow Birch

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| AA    | 9’6”, 10’6”. 4 sides clear. 1/3 heart max. Butts. | 16” | $2,000.00
| A     | 9’6”, 10’6”. 4 sides clear. 1/3 heart max. Butts. | 14” | $1,500.00
| VP    | 9’6”, 10’6”. 4 sides clear. Sound heart. Butts. | 14” | $1,200.00
| V1    | 9’6”, 10’6”. 4 sides clear. Sound heart. Also 14” 1 sm defect. | 12” | $750.00
| V2    | 9’6”, 10’6”. 4 sides clear. Sound heart. Also 12” 1 sm defect. | 11” | $550.00

### White Oak

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| AA    | 9’6”, 10’6”. 4 sides clear. No pins. Butts. | 16” | $800.00
| A     | 9’6”, 10’6”. 4 sides clear. No pins. Butts. | 14” | $600.00

### Hickory

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specifications</th>
<th>Dia</th>
<th>$/m</th>
</tr>
</thead>
</table>
| V1    | 9’6”, 10’6”. 4 sides clear. | 12” | $700.00
FALSE HEARTWOOD

Commonly caused by a wound or an opening in the bark of a tree which causes discoloration of the heartwood. False heartwood species include ash, basswood, beech, birch, hard maple, soft maple, sycamore, sweetgum, poplar, etc.
LOG MERCHANDISING / CLASSES

Hardwood logs are generally merchandized using 6 difference log classes, 7 if you include hardwood pulpwood.
VENEER LOGS

- A specific category of high-value, high quality logs generally free of internal and external surface defects.

- Veneer log specifications vary significantly among timber buyers.

- Prime & Select

- 4SC, 3SC, and even 2SC depending on market demand
VENEER QUALITY

- Straight logs
- Centered pith
- Uniform color
- Centered pitch
- No worm, gum, or mineral

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Extension Forestry
• Size does matter, but quality always trumps size!

• High-end veneer logs are the very best of the veneer logs
  • Larger and longer logs
  • 4SC (four sides clear)
    • Appearance-grade, architectural grade (sliced, half-round, quartered, rift)
  • Tighter growth rings
  • Centered pith
  • Preferred and uniform color
  • No internal or external bark defects
WALNUT & WHITE OAK VENEER TREES

Hardwood logs are generally merchandized using 6 difference log classes
WHITE OAK VENEER LOGS

White oak veneer trees skidded out full length (Champaign Co., IL). Logs will be graded and bucked accordingly to maximize log value.
WALNUT VENEER LOGS

Straight, centered pitch, no bird peck, no pin knots, narrow sapwood, etc.
prime veneer walnut

prime veneer walnut

VENEER WALNUT TREES
VENEER WALNUT TREES

Extension Forestry
VENEER WHITE OAK TREES

Extension Forestry
Variation in veneer log prices are based not only on quality, but also on:

- Species
- Markets (foreign and domestic)
  - Weather conditions (logging)
- Customer demands / wants
  - (sliced veneer for furniture vs. rotary veneer for plywood)
- Veneer manufacturer’s procurement strategy

The following species are most highly sought after for higher margin veneer markets:

- Black walnut
- Black cherry
- White oak
- Red oak (rotary and sliced)
- Sugar maple (rotary and sliced)

Logs that meet the desired specifications for the manufacture of grade lumber; may include uppers and lowers.

- Grade log specifications vary among timber buyers.
- #1, #2, and #3
- USFS = Factory logs
• General Use:
  • Manufacture of hardwood flooring, furniture, cabinets, moulding, millwork, etc.
GRADE LOGS

walnut grade logs

walnut lumber

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WALNUT GRADE LOGS

Most hardwood logs are generally merchandized using 6 difference log classes. However, you’ll never see walnut logs made into pallets, blocking, or staves.
WHITE OAK GRADE LOGS
RED & BLACK OAK SAWLOGS

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LOWER GRADE CHERRY LOGS

© Jay C. Hayek
DOWNED TREES / DECAY

Black walnut and slippery elm
overmature northern red oak

LUMBER / GRADE LOG TREES
STAVE LOGS

• A very specific category of high quality white oak logs which meet desired specification for the manufacture of tight cooperage for use in the wine and spirits industry.

• Stave log specifications vary among stave buyers.

• 3SC and sometimes 2SC
A very specific category of logs, typically white oak species, which meet desired specifications for the manufacture of tight cooperage for use in the wine and spirits industry; used to manufacture stave bolts. Each stave company has their species criteria for which white oak species they are willing to purchase. For example, American Stave Company only buys white oak (*Quercus alba*) and chinkapin oak (*Q. muehlenbergii*).
TIE LOGS

- Specific category of lower value and quality of logs intended for the production of crossties and switch ties.

- Numerous hardwood species are acceptable
3.1.1.1.1 Kinds of Wood*

Before manufacturing ties, producers shall ascertain which of the following kinds of wood suitable for crossties will be accepted:

<table>
<thead>
<tr>
<th>Ashes</th>
<th>Gums</th>
<th>Oaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beech</td>
<td>Hackberries</td>
<td>Pines</td>
</tr>
<tr>
<td>Birches</td>
<td>Hemlocks</td>
<td>Poplars</td>
</tr>
<tr>
<td>Catalpas</td>
<td>Hickories</td>
<td>Redwoods</td>
</tr>
<tr>
<td>Cherries</td>
<td>Larches</td>
<td>Sassafras</td>
</tr>
<tr>
<td>Douglas fir</td>
<td>Locusts</td>
<td>Spruces</td>
</tr>
<tr>
<td>Elms</td>
<td>Maples</td>
<td>Sycamores</td>
</tr>
<tr>
<td>Firs (true)</td>
<td>Mulberries</td>
<td>Walnuts</td>
</tr>
</tbody>
</table>

*Each railway will specify only the kind of wood it desires to use. Others will not be accepted unless specially ordered.

CROSSTIES

Hardwood crossties can be 8’0”, 8’6”, or 9’0” long depending up the specifications of the railroad company. Thickness and width dimensions can very too. 7” grade crossties may be cut to 7” x 9” or 7” by 8”. 6” grade crossties may be cut to 6” x 7” or 6” x 8”
A general category of low value species and low quality logs used in the manufacture of pallets and blocking; the term blocking/pallet logs is used interchangeably.

Usually low quality logs or low-value species with limited potential to create grade lumber or other higher-value wood products.
PALLETT / BLOCKING LOGS

Usually low quality logs or low-value species with limited potential to create grade lumber or other higher-value wood products. Common species include cottonwood, bigtooth aspen, sycamore, sweetgum, blackgum, honeylocust, elm, beech, Kentucky coffeetree, mulberry, hackberry, etc.
Pallet / Blocking Logs

- Cottonwood, sycamore, sweetgum, blackgum, honeylocust, elm, beech, maple, Ky coffeetree, ash, mulberry, river birch, hackberry, etc.
CRANE MAT LOGS

- Specific category of lower value, but longer length hardwood logs used to manufacture crane and construction mats.
  - Specifications vary, but buyers generally want logs that are $\geq$ 24-ft long
  - Pin oak, other low quality oak, ash, hickory, sweetgum, sycamore, soft maple, hackberry, etc.
  - Mats come in a variety of standard and custom lengths: 8-40 feet long
CRANE MATS
• **Merchantable**: the saleable part of a tree stem from which useable products such as lumber lumber or veneer can be produced.

• **Merchantable Height**: the height of a tree (or length of its main bole) up to which point a particular roundwood product may be obtained.
Merchantable Height = 3.5 logs, or 40 ft.
Merchantable Height = 2.25 logs, or 36 ft.
Hypothetical Black Walnut Example

- **Stumpage Value**
  - $0.60 – 1.80 / bf
  - Veneer $3.00 – 6.00 / bf

- **FOB Value**
  - $0.80 - 1.50 / bf
  - Veneer $3.00 - 10.00 / bf

- **Example**
  - 26” DBH tree; 1.5 Logs (~ 365 bf)
    - 8’6” Prime Veneer Log (~ 173 bf)
    - 8’ #1 Grade Log (~ 96 bf)
    - 8’ #3 Grade Log (~ 96 bf)

Grade Logs $115-345
-Veneer Log $634-1038

Est. Value
$749 - 1383
• Contact a local professional consulting forester for current timber prices in your area
  • Yes, there are geographic differences in hardwood log prices

• Wet winter has increased demand for logs by mills

• Hardwood log prices are still very good!
  • Black walnut
  • White oak (stave market); $0.70-1.90 / bf
  • Bur oak ($0.45-0.60 / bf depending on net footage)
QUESTIONS

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