

# Log Scaling For Timber Cruisers Timber Measurement Society

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- Cruiser is on the top of the pyramid
- Cruiser needs to know log scaling, lumber grading, & logging

# Who Does What

- ▶ Cruiser measures what has grown
- ▶ Cruiser forecasts what logger will cut and what the scaler will see
- ▶ Scaler forecasts what the mill will cut and lumber recovered
- ▶ Lumber grader grades the lumber that will go to various markets
- ▶ Cruising and scaling are a similar process except for the measurement tools



Accuracy of cruising & scaling

**What can Cruisers and Scalers Expect?**

# Cruising Accuracy: 5 Percent

## Reasons Why Cruiser And Scaler Do Not Match

Using a variable log length cruising program that measures tree heights to the foot and allows the cruiser to make deductions in feet & inches like the scaler

Acreage calculation and cutting the same acres cruised

Sampling error

Tree measurement error

Log lengths cruised verses those cut



## Cruising Accuracy (Continued)

- Poor logging practices
- Excessive breakage
- High stumping
- Leaving short logs, defective logs, and top logs
- Not removing defect when there is not 8' lumber
- Hidden defect
- Different scaling rules and taper rules



Scaling Accuracy: 2% on the net scale

Log presentation

Being able to accurately measure two way  
Diameters

Not being able to see all sides of the log

Scaling on the truck verses log roll-out

# Defect Deduction Examples

Knot  
Size



Slope  
of  
Grain



Spike  
Knot



Ring  
Count





# Defect Deductions

- **Sweep**

- The Scaler deducts for Sweep from the top of the log
- The Cruiser deducts for sweep from the butt end
  - Suggestion – Looking up the tree, if it looks like there is a little sweep, then from the top it will be more evident



## Hooked Butt

- **Evident to both the cruiser and scaler**
  - **Remember - even though the scaling cylinder will sometimes travel through a hooked butt, many times the cross grain in the wood will eliminate standard or better grades of lumber**

## Crook/Snow Break/Spike Knots

- **The Cruiser can see all sides of the log. The scaler sees a portion depending on presentation**
  - **Important - if a portion of the log will not produce 8' lumber then it is deductible**

# Spangle

The scaler has a slight advantage over the cruiser.

Spangle frequently causes the butt of the tree to have an abnormal swell that indicates how far up the tree the spangle travels. I call it a coke-bottle-butt.

The cruiser needs to look at stumps in adjacent harvest areas to determine if spangle is present and in what diameter it is prevalent.

Note – Spangle spirals in the log, causes that portion to be deductible

# Conk

- **The cruiser has an advantage over the scaler. The cruiser can see the conks. The conks are generally rubbed off in the logging process. If the rotten knot caused by the conk is on one side of the tree, not present on the ends, and that side is not visible to the scaler, then a deduction will not be made.**
- **Note – The severity of the conk rot depends of the age and health of the tree. In older timber, scalers will deduct from 6' above and 8' below the rotten conk knot.**

# Root and Stump Rot

**The scaler has an advantage.**

**Note - The cruiser needs to look on the ground around the base of the tree for fungus.**

**Increment borer samples are helpful. Comparing the color of the foliage to other trees is another good indicator. If the foliage is thin and yellow, then there is likely some rot**

# Logging Mechanical Damage

**The scaler has the advantage because the damage has not occurred at the time of cruising.**

**Note – When it comes to breakage, the cruiser needs to consider the topography, rock outcropping, the lean of the tree, sharp draws, tree heights, crown ratios, and the type of logging equipment that will be used.**

**Opinion - This damage deduction needs to be made in the field and not in the office.**

# Conclusion

- **In some ways the cruiser has an advantage over the scaler**
- **Cruisers must know scaling procedures to accurately cruise timber**
- **Log yard studies can be most helpful to the cruiser along with time in fell-and-bucked areas to observe logging damage**
- **Talk to scalers! They are nice people and often bored!**

