

USING A CONWAY-CLEVELAND LOG SCALING RULE

A log scaling rule is used to estimate the amount of lumber, in terms of board feet, that is likely to be sawn from a given log. Through the years, many different methods and formulas have been developed to calculate these values. The methods and formulas vary according to the emphasis given to the many variables involved, such as log taper, saw kerf waste, lumber size, waste due to defects, and waste lost producing rectangular lumber from round logs. These formulas were derived in one of three ways (or a combination of these ways):

- 1) Using actual outputs for a given saw mill or region (mill tally).
- 2) Using diagrams of various sizes representing the likely sawing pattern of a log (diagram rule).
- 3) Using the formula for some assumed geometric solid representing the log, adjusted for kerf, edgings, etc. (formula rule).

Many scales have been derived from these formulas over the years, and some are still in common use today, including the Doyle, Scribner, Scribner Decimal C, Doyle-Scribner, Scribner-Doyle, International, Vermont, Ontario, Two-Thirds, etc. Common usage of a particular scale is determined by regional custom or preference, by agreement between the parties involved, or by local law.

The generally accepted method of scaling a log utilizing a log rule is as follows, in simple terms:

The length of the log is determined, using the next lower value in feet, fractions discarded. Generally, an even foot value is used, since lumber is commonly produced in even lengths. The log rule is used to measure the diameter of the log at the small end of the log, inside the bark. A footage value for the log is found on the rule at the point where the diameter intersects the row of figures corresponding to the length of the log. There are two generally accepted methods of scaling the diameter...by rounding or by truncating the fractional values, depending on agreement between parties or regional custom.

This footage value is an estimate of the board feet of lumber obtainable from the log. (Note: the figures obtained with the Scribner Decimal C rule must be multiplied by 10).

Suggested sources of more information on the various scales and the practice of log scaling:

- National Forest Log Scaling Handbook, U.S. Forest Service FSH2443.71, U.S. Government Printing Office, Washington, DC 20402
- Various books on forest mensuration at your public library.
- Forestry or Natural Resources or Forestry Extension Service Department of your regional or state government or university.