

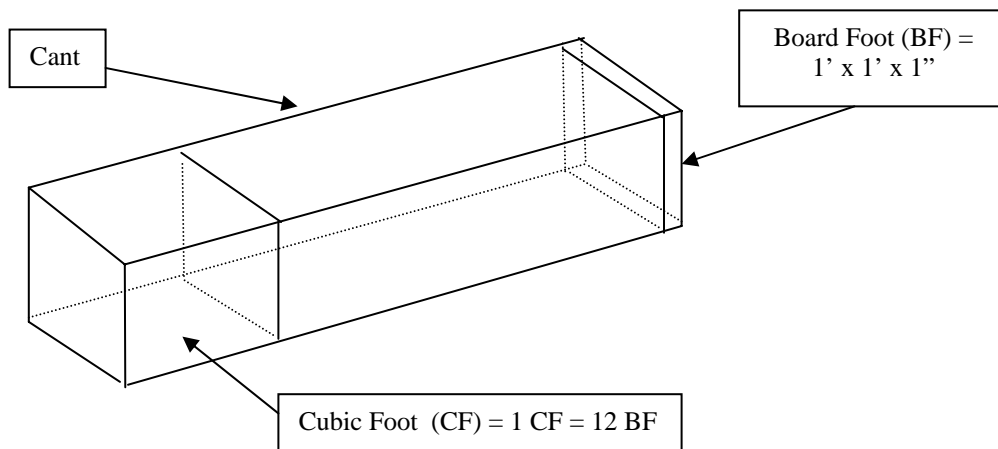
# Board Feet Doyle Log Rule Overview

Reasons not to rely on Doyle Log Rule Board Feet in determining volumes in standing trees.

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One Foot by One Foot by One Inch is one Board Foot (BF). Board Foot is an accurate form of measurement when dealing with biomass and/or rectangular boards, but is not accurate when predicting cut-out into lumber from a standing tree. A “board foot” is not to be mistaken with a “Doyle Log Rule Board Foot,” which is a “predicted estimate” of the first. A pure board foot is illustrated below:



- Today our specialized southern pine mills utilize as high as 10 to 11 BF per CF of biomass.
- In 1825 our southern pine mills (now considered antiquated) utilized 3 to 5 BF per CF of biomass.

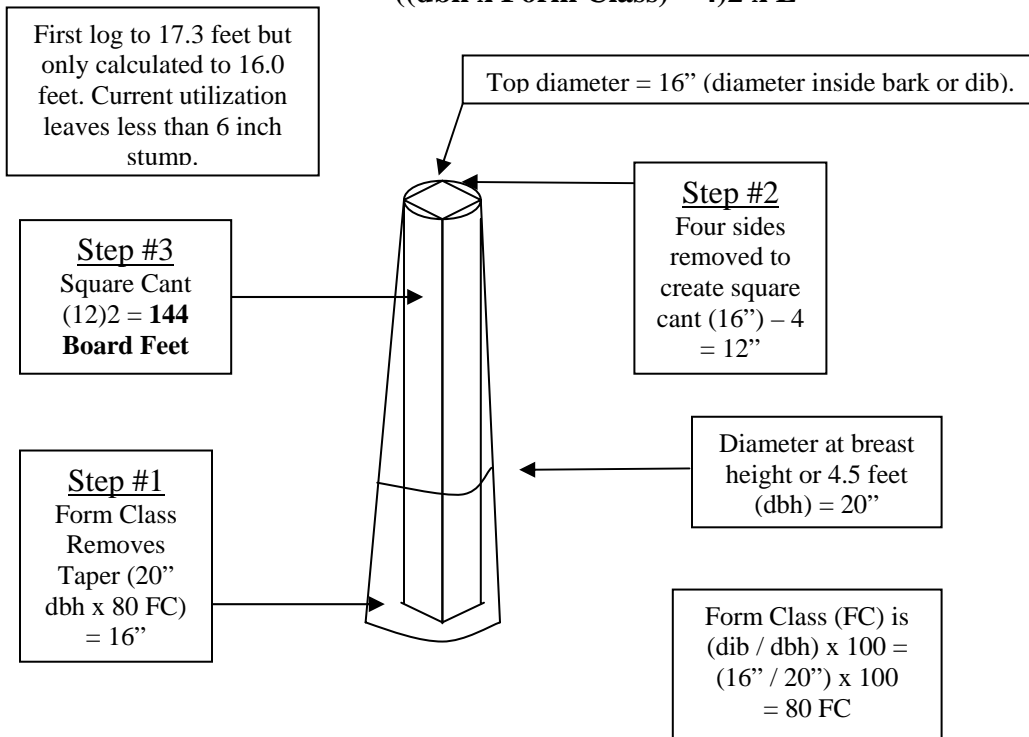
The Doyle Log Rule Scale for Board Foot (which is an estimate of the pure board feet) was created in 1825 by “Edward Doyle” to estimate the predicted utilization of a standing tree into pure board feet lumber based on his mills utilization.

Doyle needed a method to predict the estimated board foot cut-out of a standing tree to provide a representation that was beneficial to his mill’s utilization and profit in 1825, and successfully did as his mill profit showed.

Building on Doyle’s equations with a set standard of utilization, Clement Mesavage and James Girard in **1946** established Doyle Log Rule Board Foot Tables known as “Tables for Estimating Board-Foot Volume of Timber”.

Doyle's formula for "Doyle Log Rule Board Foot" is illustrated below with a 20 inch dbh tree:

$$((\text{dbh} \times \text{Form Class}) - 4)2 \times L$$



For many years Doyle Log Rule Board Feet was the industry norm until utilization doubled due to technological advancements proving Doyle to be out-of-date and inaccurate (primarily in diameters between 10" and 20" dbh, which comprise the majority of Arkansas' timber). Unfortunately, there are landowners still relying on Doyle log rule board feet, and likewise, unknowingly suffer losses when dealing in Doyle Board Feet (refer to Table 1). An overview of Doyle Board Foot inaccurate reporting, in contrast to present-day industry norm, is:

- Fixed taper on 2<sup>nd</sup> – 6<sup>th</sup> logs (not accurate).
- Top end utilization based on association with dbh (not accurate).
- Removed taper to create cylinder (not primary current utilization).
- Removed slabs to create cant (not primary current utilization).
- 3 – 5% variance between each percent of form class (not accurate).

Current day mill utilization compared below:

