The Master Woodland Manager Stick

The MWM stick is a useful tool for estimating both log and tree volumes; all in Scribner board feet (bf).

This stick can be used to make crude estimates of tree volume. When you need more precise information, contact a consulting forester.

Logs

1. The 'Log' side is suitable for measuring log diameter **inside bark** at the **small end.** The scale on the top is in inches. Record the diameter in inches.

2. Logs are generally cut and sold in two-foot multiples with some additional length for trim. Both the lengths and the trim are usually specified by the buyer. Measure log length with a tape. Record the length in feet.

3. Log volume is determined from the tables on the "Log" side of the stick. For example, for a log that is 24' 10" long and 15" in diameter, find the line marked 15 and follow it to the column marked 24. The volume is 210 bf.

Log Volume Table (Board Feet)									
Length		12	14	16	17	18	20	22	24
Diameter	15	110	120	140	150	160	180	200	210
	16	120	140	160	170	180	200	220	240
	17	140	160	180	200	210	230	250	280
	18	160	190	210	230	240	270	290	320

Trees

The "Tree" side is used for estimating the volume of standing trees. Three steps are required. The MWM stick makes all three possible.

1. **Estimate the diameter** of the tree 4 1/2 feet above the ground (on the uphill side). Position yourself with your eyes 25" from the tree. Hold the stick horizontally as shown in Figure 1. Line up the **left end** of the stick with the left side of the tree (outside the bark). **Without moving your head,** read the diameter on the scale at the top edge of the stick. Record that diameter as DBH (diameter at breast high) in inches.

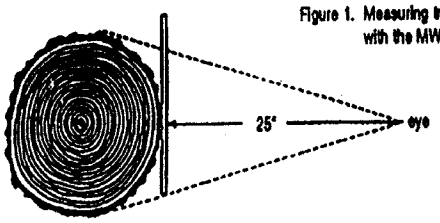

Figure 1. Measuring tree diameter with the MWM stick

2. **Estimate the total height** of the tree. Position yourself 100' from the tree in a place from which you can see both the top and bottom of the tree. Hold the stick vertically 25" from your eye as shown in Figure 2. Line up the bottom of the stick with the bottom of the tree. **Without moving your head,** read the height of the tree (in feet) on the right hand scale. Record the height.

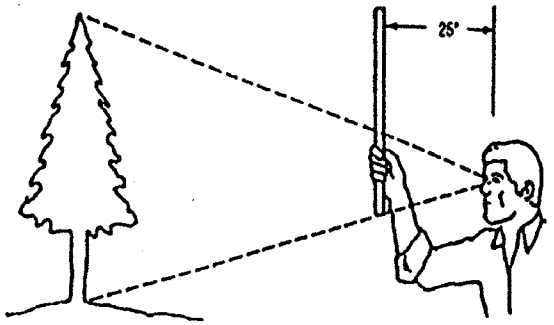

Figure 2. Measuring tree height with MWM stick. Hold 25" from the eye. Any other distance or tilting causes incorrect readings.

It is not necessary to measure the height of all trees; only enough to determine an appropriate taper.

Tree Taper Table (Total Tree Height-Feet)					
DBH (inches)		12	16	20	24
Taper	Much (Tarif 25)	60	68	76	84
	Medium (Tarif 35)	90	98	108	118
	Little (Tarif 45)	116	128	138	148

3. Estimate the volume of the tree using the above information and the tree volume table. Select an appropriate line (much, medium, or little taper). For example, a 16" DBH tree with much taper is about 68' tall, a tree the same diameter that is 98' tall has medium taper and one that is 128' tall has little taper. After you determine the appropriate line--medium taper, for example--you can see that a 10" tree has 64 bf and a 20" tree has 441 bf. Shorter, fast-taper trees of the same DBH have less volume. Taller trees--those with less taper--have more volume for any given DBH.

Tree Volume Table (Board Feet)												
DBH (inches)		10	11	12	13	14	15	16	17	18	19	20
Taper	Much (Tarif 25)	41	50	76	96	117	141	168	192	221	251	283
	Medium (Tarif 35)	64	89	117	148	182	218	257	299	344	391	441
	Little (Tarif 45)	87	122	161	203	250	300	359	411	472	538	607

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