

APPENDIX A—HOW TO MAKE A BILTMORE STICK

Biltmore sticks will be provided during the day of the competition. Homemade Biltmore sticks may be used at the Regional Contest ONLY and are subject to inspection prior to their use during the Forestry segment. Homemade Biltmore sticks may be disallowed at the discretion of the Forestry official in charge at the event.

Let common sense be your guide if using a homemade Biltmore stick. In other words, don't draw or write anything on the Biltmore sticks that may look like an aid to you or your team.

Listed below is the table with the formulas for 21", 23", and 25" sticks. Industrial-sized paint stirring sticks make great Biltmore sticks. You may be able acquire them at any store that sells paint.

Instructions:

Diameter Increments - On one side of your blank stick, measure the distance from the end of the stick to the point where you will make your first mark for "diameter 4". For example, if you have a 23" blank stick, measure 3.4 inches from the end of the stick and make a mark. The second mark you'll make is 4.5 inches from the end of the stick, and so on...

Hypsometer Increments - Using the table marked "Height" and the other side of your stick, make your first measurement from the end of the stick to the point where you will make your first mark for "16". For example, if you have a 21" stick, measure 5.1 inches from the end of the stick and make a mark. This mark will indicate the first 16 feet on your tree. The second mark is located 10.2 inches from the end of the stick, and so on...

Diameter and Hypsometer Increments for a Biltmore Stick

Diameter	25" Stick	23" Stick	21" Stick
4	3.7	3.7	3.7
5	4.6	4.5	4.5
6	5.4	5.3	5.3
7	6.2	6.1	6.1
8	7.0	6.9	6.8
9	7.7	7.6	7.5
10	8.5	8.3	8.2
11	9.2	9.0	8.9
12	9.9	9.7	9.6
13	10.5	10.4	10.2
14	11.2	11.0	10.8
15	11.9	11.7	11.5
16	12.5	12.3	12.1
17	13.1	12.9	12.6
18	13.7	13.5	13.2
19	14.3	14.1	13.8
20	14.9	14.6	14.3
21	15.5	15.2	14.8
22	16.0	15.7	15.4
23	16.6	16.3	15.9
24	17.1	16.8	16.4
25	17.7	17.3	16.9
26	18.2	17.8	17.4
27	18.7	18.3	17.9
28	19.2	18.8	18.3
29	19.7	19.3	18.8
30	20.2	19.8	19.3
31	20.7	20.2	19.7
32	21.2	20.7	20.1
33	21.7	21.1	20.6
34	22.1	21.6	21.0
35	22.6	22.0	
36	23.0	22.5	
37	23.5		
38	23.9		
39	24.4		
40	24.8		

Height	25" Stick	23" Stick	21" Stick
16	6.1	5.6	5.1
32	12.1	11.2	10.2
48	18.2	16.7	15.3
64	24.2	22.3	20.4

**Hypsometer (Height) Increment =
(Biltmore Length x Log Length) / 66 ft.**

Diameter Increment = SQRT [(a (d*d)) / a+d]
a = fixed distance from eye to stick; e.g. 25"
d = any selected tree diameter