- KOZAK, A. 1962. Sequential Sampling of *Megastigmus Spermatrophus* (Wachtl) Infestation on Douglas Fir. Unpublished report for Professor J. H. G. Smith, Faculty of Forestry, U.B.C.
- McCRACKEN, and D. DANIEL. 1961. A Guide to FORTRAN Programming. John Wiley and Sons, New York.
- SMITH J. H. G. and J. W. Ker. 1957. Some Distributions Encountered in Sampling Forest Stands. For. Sc. Vol. 3. No. 2 pp. 137-143.
- STEEL, G. D. and J. H. TORRIE, 1960. Principles and Procedures of Statistics. McGraw-Hill Book Co. Inc. New York.

TABLE OF LOG VOLUME FACTORS

By C. Joergensen¹

The following factors represent volume, in cubic feet, per foot of log length; hence the volume of a log equals its length times the appropriate factor, as determined from the two end-diameters.

The volume factor for a given log is found in the row corresponding to smallest diameter (d) of the log, and in the column corresponding to the difference (D — d) between largest diameter (D) and smallest diameter.

EXAMPLE:

largest diameter (D)	20 inches
smallest diameter (d)	16 inches
difference (D-d)	4 inches
length (L)	32 feet
factor (row 16, col. 4)	1.789
volume (1.789×32)	57.248 cu. ft.

Attention is drawn to the term *smallest diameter*, which *must* be used as index to rows, regardless of whether it happens to be the top or the butt diameter. Normally, top diameter is smaller than butt diameter; but this may be reversed, for example, by a defect deduction at the butt end.

The formula used to calculate the volume factors (v) is a transposed version of the Smalian formula (length = 1 foot):

$$v = (d^2 + D^2) \times 0.00272707696$$

Log volumes calculated by the factor method are identical with those obtained from the authorized Table of Ten Times Volume of Cylinders in Cubic Feet.

¹ Columbia Cellulose Company Limited, Vancouver, B.C.

d	D - d										
	0	1	2	3	4	5	6	7	8	9	10
0	0.000	0.003	0.011	0.024	0.044	0.068	0.098	0.134	0.174	0.221	0.273
1	0.005	0.014	0.027	0.046	0.071	0.101	0.136	0.177	0.224	0.275	0.333
2	0.022	0.035	0.055	0.079	0.109	0.145	0.185	0.232	0.284	0.341	0.404
3	0.049	0.068	0.093	0.123	0.158	0.199	0.245	0.297	0.355	0.417	0.485
4	0.087	0.112	0.142	0.177	0.218	0.265	0.316	0.374	0.436	0.505	0.578
5	0.136	0.166	0.202	0.243	0.289	0.341	0.398	0.461	0.529	0.603	0.682
6	0.196	0.232	0.273	0.319	0.371	0.428	0.491	0.559	0.633	0.712	0.796
7	0.267	0.308	0.355	0.406	0.464	0.526	0.595	0.668	0.747	0.832	0.922
8	0.349	0.395	0.447	0.505	0.567	0.635	0.709	0.788	0.873	0.963	1.058
9	0.442	0.494	0.551	0.614	0.682	0.755	0.834	0.919	1.009	1.104	1.205
10	0.545	0.603	0.665	0.734	0.807	0.886	0.971	1.061	1.156	1.257	1.364
11	0.660	0.723	0.791	0.864	0.944	1.028	1.118	1.214	1.314	1.421	1.533
12	0.785	0.854	0.927	1.006	1.091	1.181	1.276	1.377	1.484	1.595	1.713
13	0.922	0.995	1.074	1.159	1.249	1.344	1.445	1.552	1.664	1.781	1.903
14	1.069	1.148	1.233	1.323	1.418	1.519	1.625	1.737	1.854	1.977	2.105
15	1.227	1.312	1.402	1.497	1.598	1.704	1.816	1.933	2.056	2.184	2.318
16	1.396	1.486	1.582	1.683	1.789	1.901	2.018	2.141	2.269	2.403	2.542
17	1.576	1.672	1.773	1.879	1.991	2.108	2.231	2.359	2.493	2.632	2.776
18	1.767	1.868	1.974	2.086	2.203	2.326	2.454	2.588	2.727	2.872	3.022
19	1.969	2.075	2.187	2.304	2.427	2.555	2.689	2.828	2.973	3.123	3.278
20	2.182	2.293	2.411	2.533	2.662	2.795	2.934	3.079	3.229	3.384	3.545
21	2.405	2.523	2.645	2.773	2.907	3.046	3.191	3.341	3.496	3.657	3.823
22	2.640	2.763	2.891	3.024	3.163	3.308	3.458	3.613	3.774	3.941	4.112
23	2.885	3.013	3.147	3.286	3.431	3.581	3.736	3.897	4.063	4.235	4.412
24	3.142	3.275	3.414	3.559	3.709	3.864	4.025	4.192	4.363	4.541	4.723
25	3.409	3.548	3.692	3.842	3.998	4.159	4.325	4.497	4.674	4.857	5.045
26	3.687	3.832	3.982	4.137	4.298	4.464	4.636	4.813	4.996	5.184	5.378
27	3.976	4.126	4.282	4.442	4.609	4.781	4.958	5.141	5.329	5.522	5.721
28	4.276	4.432	4.592	4.759	4.931	5.108	5.291	5.479	5.672	5.871	6.076
29	4.587	4.748	4.914	5.086	5.263	5.446	5.634	5.828	6.027	6.231	6.441
30	4.909	5.075	5.247	5.424	5.607	5.795	5.989	6.188	6.392	6.602	6.818
31	5.241	5.413	5.591	5.773	5.961	6.155	6.354	6.559	6.769	6.984	7.205
32	5.585	5.762	5.945	6.133	6.327	6.526	6.730	6.940	7.156	7.377	7.603
33	5.940	6.122	6.310	6.504	6.703	6.908	7.118	7.333	7.554	7.780	8.012
34	6.305	6.493	6.687	6.886	7.090	7.300	7.516	7.737	7.963	8.195	8.432
35	6.681	6.875	7.074	7.279	7.489	7.704	7.925	8.151	8.383	8.620	8.863
36	7.069	7.268	7.472	7.682	7.898	8.119	8.345	8.577	8.814	9.057	9.305
37	7.467	7.671	7.881	8.097	8.318	8.544	8.776	9.013	9.256	9.504	9.757
38	7.876	8.086	8.301	8.522	8.748	8.980	9.218	9.460	9.708	9.962	10.221
39	8.296	8.511	8.732	8.958	9.190	9.428	9.670	9.918	10.172	10.431	10.696
40	8.727	8.948	9.174	9.406	9.643	9.886	10.134	10.387	10.647	10.911	11.181
41	9.168	9.395	9.627	9.864	10.107	10.355	10.608	10.867	11.132	11.401	11.677
42	9.621	9.853	10.090	10.333	10.581	10.835	11.094	11.358	11.628	11.904	12.185
43	10.085	10.322	10.565	10.813	11.066	11.326	11.590	11.860	12.135	12.416	12.703
44	10.559	10.802	11.050	11.304	11.563	11.827	12.097	12.373	12.654	12.940	13.232
45	11.045	11.293	11.546	11.806	12.070	12.340	12.615	12.896	13.183	13.474	13.772
46	11.541	11.795	12.054	12.318	12.588	12.864	13.145	13.431	13.723	14.020	14.323
47	12.048	12.307	12.572	12.842	13.117	13.398	13.684	13.976	14.274	14.576	14.884
48	12.566	12.831	13.101	13.376	13.657	13.944	14.235	14.533	14.835	15.143	15.457
49	13.095	13.365	13.641	13.922	14.208	14.500	14.797	15.100	15.408	15.722	16.041
50	13.635	13.911	14.192	14.478	14.770	15.067	15.370	15.678	15.992	16.311	16.635