



**Northern Vermont Timberland - Stowe, Vermont - Fall 2010**

**Hal Wilkins - Timber Resource Economics**

**US Agent for von Mohl & Ohnemus, GmbH - Bremen, Germany**

**Westminster Station, VT 05159**

# **Timber Measurements Society**

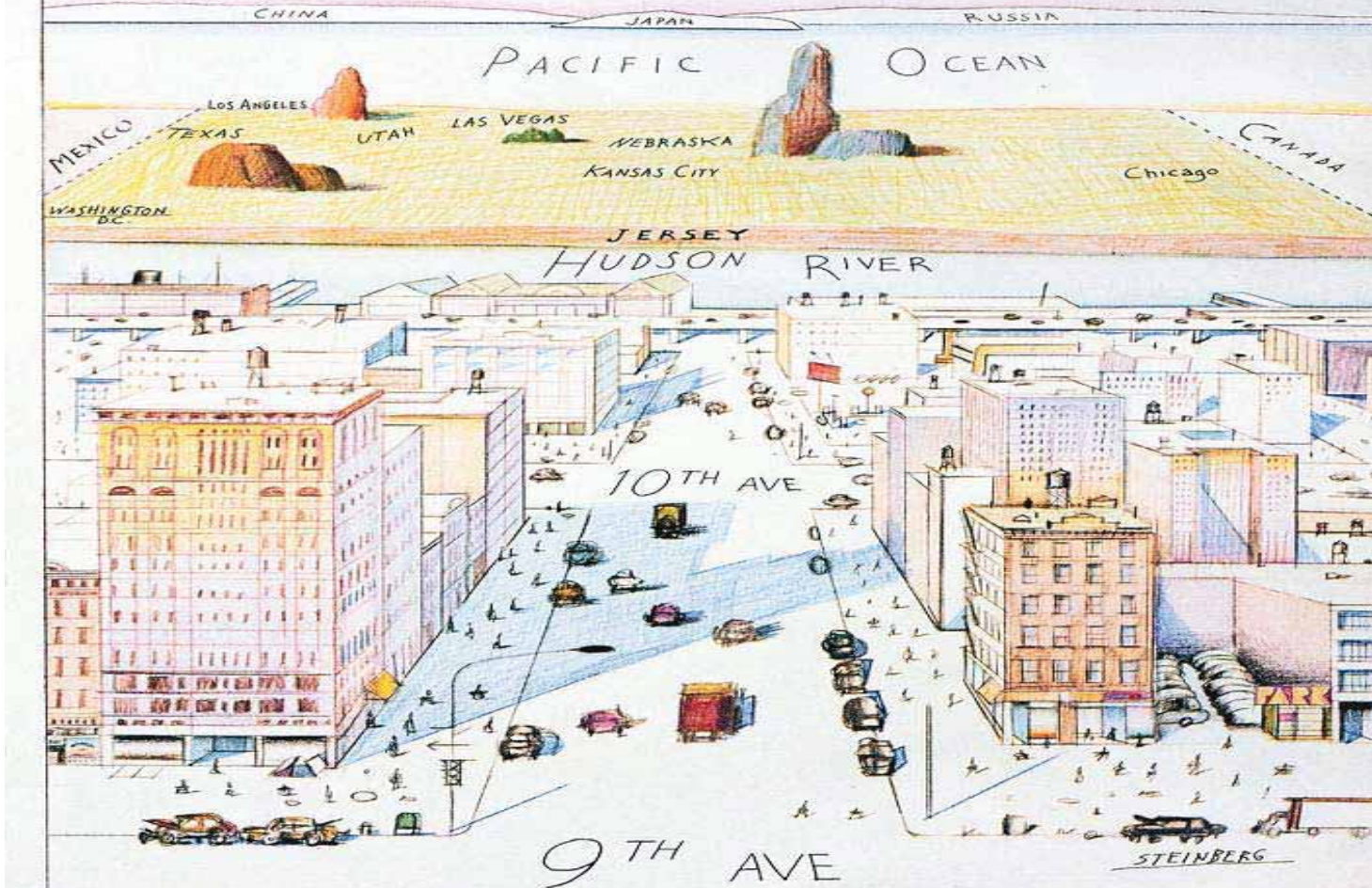
**Central Meeting  
Tacoma, Washington**

**6 - 8 April 2011**

Mar. 29, 1976

Price 75 cents

# THE NEW YORKER



The New England World View

# Part 1

## **Eastern Perspectives**

*The 12,000 Mile Journey from New England to  
Siberia and the Far East*



Timber Ship "Poola" - Liepaja, Latvia



**Norita, Eastport, Maine**  
Loading Spruce Logs for Turkey (1998)

QuickTime™ and a  
decompressor  
are needed to see this picture.

The Early Days.....Northern NH - 1970s



**Angara River Timber Complex**





Shipping Day / Newfane, Vermont  
Made in USA; Shipped to Siberia, USSR



**Start Up - Ust Ilimsk, Siberia**



**Ust Ilimsk Office Park Condo**



- **Russian Timber Wagons**
  - **Irkutsk, Siberia**





White Pine Logs at Vermont Concentration Yard -  
Winter 2011



Red Pine Logs at Vermont Concentration Yard  
(16' logs; Average SED = 11" / 28 cm)







Hemlock.....the Eastern variety - *Tsuga canadensis*  
(16' - 20' / 12" SED avg.)



Eastern White Pine (*Pinus strobus*)  
Large Diameter (!) - 16' x 14" - 20" SED



Scaling Red Oak Sawlogs for Chinese Furniture Plant  
(They're never big enough....)



Agonizing over the Logs - Spring 2010  
Red Oak Sawlogs at Concord, NH Yard



Eastern White Pine Sawlogs  
Heading to a Quebec Sawmill

# Part 2

Log Rules, Misules, Conversions,  
and Other Confusions



**First Light; Scaling Sugar Maple Logs  
Eastern New York State -2010**



**White Ash Log Sale - 2011  
Southern Catskill Mountains, NYS March**





**White Ash Sawlogs - Grading Day**



**Grading Sugar Maple “Piano Action” Logs**

Scribner  
Maine  
International

Py 2.72

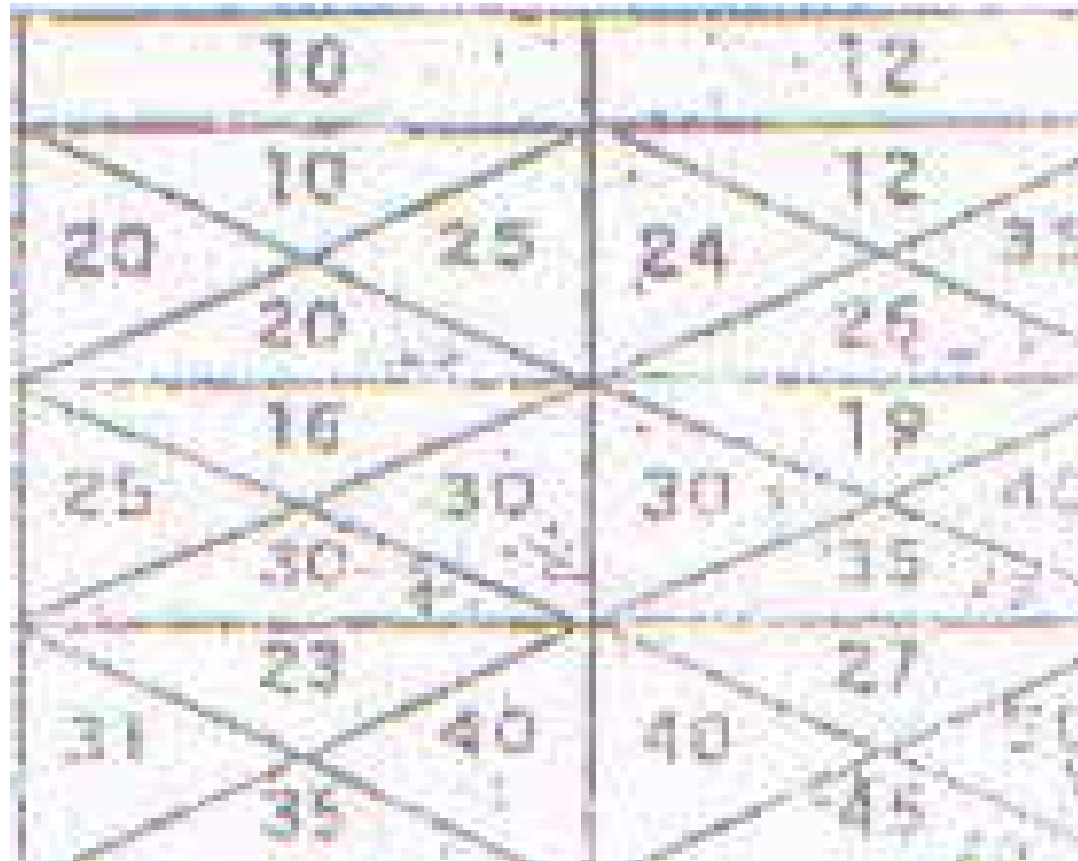
Length in Feet

	8		10		12		14		16						
8	15	8	20	10	25	24	12	35	28	14	40	32	16	45	
9	20	13	25	25	16	30	30	19	40	35	27	45	40	25	50
10	24	18	35	31	23	40	40	27	50	45	37	60	50	36	70
11"	32	25	40	40	31	50	50	37	60	55	43	70	65	49	85
12	40	32	50	49	40	65	59	48	80	69	55	90	79	64	105
13	48	41	60	61	51	75	73	61	90	85	71	105	97	81	120
14	57	50	70	71	63	90	86	75	105	100	85	120	114	100	140
15	65	61	80	88	76	100	107	91	120	115	100	140	135	121	160
16	71	75	90	99	90	110	119	108	135	135	125	160	159	144	180
17	85	85	100	115	106	130	139	130	155	155	142	180	185	167	205
18	93	95	110	125	123	145	160	147	175	180	172	205	213	196	230
19	106	110	125	135	141	165	180	169	205	210	197	235	240	225	270
20	120	125	140	150	155	180	190	190	225	230	225	265	280	260	300
	140	135	150	175	160	190	210	210	225	245	250	265	280	290	300

Diameter in Inches

Log Rule Comparison Chart (1978)  
Used at IP, Log Yards Maine

# Detail of IP Log Rule Comparison Chart (Buy on Doyle; Sell on Maine)



G. T. Forest Products, Inc. - General Timber  
 PO Box 371 Fort Edward, NY 12825 518.638.6484

Date: 10-Mar-10

Red Oak

#10038

#	Length	Dia.	Grade	Scale (Doyle)	Scale (Int'l)
1	8	21	S	144	155
2	8	18	S	98	110
3	9	15	V	85	85
4	10	18	R	122	140
5	10	15	S	75	95
6	8	18	V	98	110
7	8	19	R	127	140
8	8	22	S	162	170
9	8	18	S	98	110
10	8	18	S	98	110
11	7	22	S	142	145
12	10	19	S	141	155
13	9	26	V	81	95
14	10	16	R	90	110
15	9	15	V	65	85
16	9	14	V	56	70
17	9	14	V	56	70
18	8	14	R	50	65
18	10	15	V	75	95
20	10	16	V	90	110
21	10	14	R	62	80
22	10	14	R	62	80
23	9	16	V	81	95
24	10	16	V	90	110
25	10	15	V	75	95
26	8	18	R	98	110
27	8	16	V	81	95
28	9	15	V	65	85
29	10	17	V	106	125
30	10	15	S	75	95
31	10	17	V	106	125
32	10	16	R	122	140
33	10	16	V	90	110
34	10	14	R	62	80
35	10	14	R	62	80
36	10	17	V	106	125

Subtotal 3276 3855

Paper Cuts (8%) 262 308

Total BF 3538 4163  
 BF Doyle BF Intl

Est. Net Shipping Weight = 42,463 lbs.

Test Load #1 - High-Grade Red Oak Logs for Jiaying-Heyin Import Export Co., Ltd  
 (V = Veneer; R = Rotary; S = Sawlog)

# Log Scale Sheet

International and Doyle Log Rules Shown

Log Rule Comparison Volumes (In MBF)  
 D=Doyle I=International S=Scribner

Length >	8D	8I	8S	10D	10I	10S	12D	12I	12S	14D	14I	14S	16D	16I	16S
<b>Dia</b>															
<b>8</b>	20	15	10	10	20	20	12	25	20	14	35	20	15	40	30
<b>9</b>	13	20	20	16	30	30	19	35	30	22	45	30	25	50	40
<b>10</b>	18	30	30	23	35	30	27	45	30	32	55	40	36	65	60
<b>11</b>	25	35	30	31	45	40	37	55	40	43	70	50	49	80	70
<b>12</b>	32	45	40	40	55	50	48	70	60	56	85	70	64	95	80
<b>13</b>	41	55	50	51	70	60	61	85	70	71	100	80	81	115	100
<b>14</b>	50	65	60	63	80	70	75	100	90	88	115	100	100	135	110
<b>15</b>	61	75	70	76	95	90	91	115	110	106	135	120	121	160	140
<b>16</b>	72	85	80	90	110	110	108	130	120	126	155	140	144	180	160
<b>17</b>	85	95	90	106	125	120	127	150	140	148	180	160	169	205	180
<b>18</b>	98	110	110	123	140	130	147	170	160	172	200	190	196	230	210
<b>19</b>	113	125	120	141	155	150	169	190	180	197	225	210	225	260	240
<b>20</b>	129	235	240	160	175	170	192	210	210	224	250	240	236	290	280
<b>21</b>	145	155	150	181	195	190	217	235	230	253	280	270	289	320	300
<b>22</b>	162	170	170	202	215	210	242	260	250	284	305	290	324	355	350
<b>23</b>	181	185	180	226	235	230	271	285	280	316	335	330	361	390	380
<b>24</b>	200	205	210	250	255	250	300	310	300	350	370	350	400	425	400
<b>25</b>	221	220	230	276	280	290	331	340	340	386	400	400	441	460	460
<b>26</b>	242	240	250	303	305	310	363	370	370	424	435	440	484	500	500
<b>27</b>	265	260	270	331	330	340	397	400	410	463	470	480	529	540	550
<b>28</b>	288	280	290	360	355	360	432	430	440	504	510	510	576	585	580
<b>29</b>	313	305	310	391	385	380	469	465	460	547	545	530	625	630	610
<b>30</b>	338	325	330	423	410	410	507	495	490	592	585	570	676	675	650

**Table 3.**  
**Comparison of board foot volumes for the Doyle, Scribner and International**  
 **$\frac{1}{4}$ -inch log rules based on 16-ft. logs.**

Small-end Diameter (Inches)	Doyle Rule	(Volume in Board Feet) Scribner Rule	International $\frac{1}{4}$ -inch Rule
5	4	15	20
8	16	32	40
10	36	50	65
12	64	79	95
14	100	114	135
16	144	150	180
20	256	280	290
28	441	450	460
30	676	657	675

# NELA Log Conversion Chart

Table 4. Comparisons of Various Log Rules

Comparisons of the volumes of 16 ft. logs expressed in board feet according to Doyle, Scribner, and International 1/4" Log Rules, with the volumes of the same logs expressed in ft<sup>3</sup> and m<sup>3</sup>.

Dia. (Inch)	Board Feet			Cubic Volume	
	Doyle	Scrib. Int. 1/4"		ft <sup>3</sup>	m <sup>3</sup>
8	16	32	40	5.59	0.158
9	25	42	50	7.07	0.200
10	36	54	65	8.73	0.247
11	49	64	80	10.56	0.299
12	64	79	95	12.57	0.356
13	81	97	115	14.75	0.418
14	100	114	135	17.10	0.484
15	121	142	160	19.63	0.555
16	144	159	180	22.34	0.633
17	169	185	205	25.22	0.714
18	196	213	230	28.27	0.800
19	225	240	260	31.50	0.892
20	256	280	290	34.91	0.989
21	289	304	320	38.48	1.090
22	324	334	355	42.24	1.196
23	361	377	390	46.16	1.307
24	400	404	425	50.26	1.423
25	441	459	460	54.54	1.544
26	484	500	500	58.99	1.671
27	529	548	540	63.62	1.802
28	576	582	585	68.42	1.938
29	625	609	630	73.39	2.078
30	676	657	675	78.54	2.224



Average Conversion Factors For Wood Products  
(English to Metric)

Product	Old Unit (English)	To convert to:	Multiply By:	To Convert from New c. Multiply By:
Logs	MBF	Cu. Meters	4,200	0.2363
Softwood Lumber	MBF	Cu. Meters	2,360	0.423/29
Hardwood Lumber	MBF	Cu. Meters	2,353	0.423/28
Wood Chips	STN	Metric Tons	0.607	1.132

Volume Equivalents

Common Log Rule Metric Conversions

MBF<sup>(1)</sup> = 125 ft<sup>3</sup> = 3.48 m<sup>3</sup> based on International 1/4" Log Rule

MBF<sup>(1)</sup> = 136 ft<sup>3</sup> = 3.90 m<sup>3</sup> based on Scribner Log Rule

MBF<sup>(1)</sup> = 162 ft<sup>3</sup> = 4.58 m<sup>3</sup> based on Doyle Log Rule

(1) Figures based on cubic volume of a log 16 ft. long and 16 in. diameter under bark at top end. Could be used for average comparisons when accuracy of ± 10% acceptable. Multipurpose comparison requires computation of volume for each individual log rule.

Average Conversion Factors For Wood Products (English to Metric)				
Product	Std Ind Unit (English)	To convert to:	Multiply By:	To Convert from Metric Multiply By:
Logs	MBF	Cu. Meters	4.530	0.2208
Softwood Lumber	MBF	Cu. Meters	2.350	0.423729
Hardwood Lumber	MBF	Cu. Meters	2.350	0.423729
Wood Chips	STN	Metric Tons	0.907	1.102

Volume Equivalents				
Common Log Rule Metric Conversions				
MBF <sup>(1)</sup>	= 123 ft <sup>3</sup>	= 3.48 m <sup>3</sup>	based on	International 1/4" Log Rule
MBF <sup>(1)</sup>	= 138 ft <sup>3</sup>	= 3.90 m <sup>3</sup>	based on	Scribner Log Rule
MBF <sup>(1)</sup>	= 162 ft <sup>3</sup>	= 4.59 m <sup>3</sup>	based on	Doyle Log Rule

(1) Figures based on cubic volume of a log 16 ft. long and 15 in. diameter under bark at top end. Could be used for average comparisons when accuracy of ± 10% is acceptable. More precise comparisons require computation of volume for each using individual log rules.

- Conversion Factor - MBF to Cubic Meters:

4.53 ?      3.48 ?      Something Else?

Source: "Log Rules and Other Useful Information"

Northeastern Logger's Association, Old Forge, NY



- Weyerhaeuser Dock, Tacoma Jan. 2011
  - 4MM BF? 4.5 MM BF? 5 MM BF?





# **Hal Wilkins**

**Forest Resource Economics**

**PO Box 187 Westminster Station, VT**

**802.722.3039 802.254.0808 (cell)**