Tree Kinks, Crooks & Forks

A Timber Cruiser's Perspective: Making Trees into Logs

Paul Wagner –

University of Washington: BA, Forest Management, 1980; MBA ,1988.

Vice President/Project Manager, employed by Atterbury Consultants Inc. since May 1989.

Past employment with Washington Department of Natural Resources, Davey Tree Surgery and the USDA Forest Service.

25 years experience cruising timber

Atterbury Consultants, Inc.

3800 SW Cedar Hills Blvd., #145

Beaverton, OR 97005

206-499-0080

pwagner@atterbury.com

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- Because I want to emulate cutout, where scalers measure logs and then look up Scribner board foot volume according to scaling rules.

I measure tree dimensions and input them to my trusty data recorder running SuperACE

(a fine product of Atterbury Consultants.)

- A variable log length, variable top diameter for bole height cruise program is required for accurate cruising.
- I measure DBH, Form Factor (taper) and tree height to a top fraction diameter, all outside bark measurements.
- SuperACE can calculate scaling diameters then anywhere along the tree bole.

Sometimes trees just don't make nice 40 foot logs.

Trees don't have an "average" total height

And dang it; they're not straight

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- What are my clients or local market preferred log lengths?

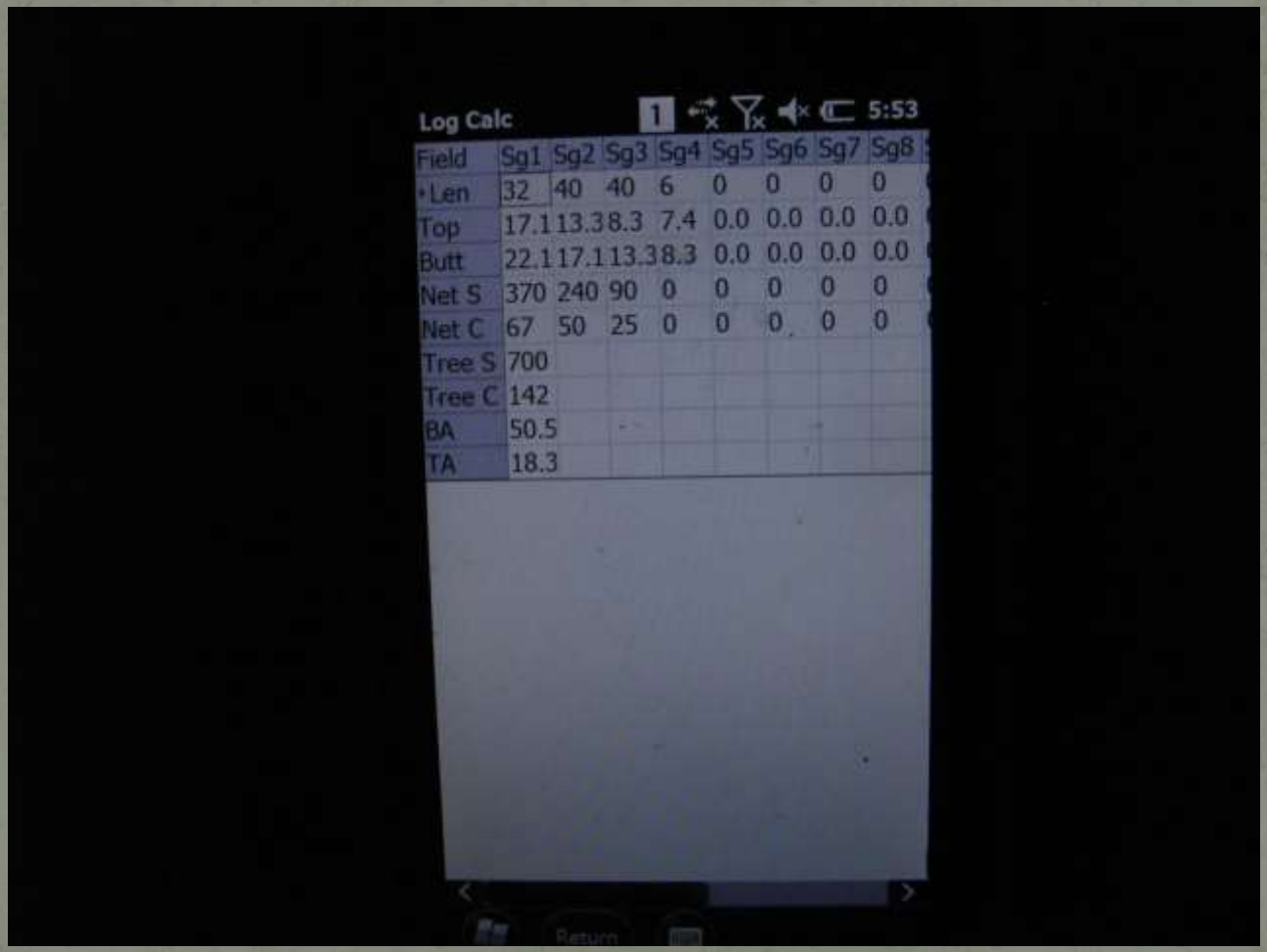
This kink split back 8 ft. when it fell

What do typical log loads look like?

Log lengths have different values

DOUGLAS FIR LOG PRICE MATRIX -- DARRINGTON								
March 2015 Log Prices								
Length	40'	36' - 38'	32' - 34'	28' - 30'	24' - 26'	22'	16' - 20'	12' - 14'
Grade								
# 2 Sawmill & Btr. (31" Butt Diameter & Smaller -- Long Axis Insi	$ 600	$ 576	$ 564	$ 510	$ 420	$ 420	$ 480	$ 357
# 3 Sawmill (10" - 11" Scaling Diameter)	$ 600	$ 576	$ 564	$ 510	$ 420	$ 420	$ 480	$ 357
# 3 Sawmill (8" - 9" Scaling Diameter)	$ 600	$ 576	$ 564	$ 510	$ 420	$ 420	$ 480	$ 357
# 3 Sawmill (6"- 7" Scaling Diameter) & #4 Sawmill (5" +)	$ 600	$ 576	$ 564	$ 510	$ 420	$ 420	$ 480	$ 357
# 2 Sawmill & Btr. (32" Butt Diameter & Larger)	$ 375	$ 360	$ 353	$ 319	$ 263	$ 263	$ 300	$ -
# 3 Sawmill (12" + Scaling Diameter)	$ 375	$ 360	$ 353	$ 319	$ 263	$ 263	$ 300	$ -
Utility & Short Log	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Cruise program for handheld allows checking scale diameters



Cruise tree data: preferred lengths, variable bole top, cull segments, breakage.

0013	0001	40	1	DF	23.5	16	89	4	119	3240	7340	7332		
0013	0002	40	1	DF	19.0	16	81	4	107	3240	3340	4316		
0013	0003	40	1	DF	20.0	16	82	4	106	3240	3340	4320		
0013	0004	40	1	DF	20.0	16	85	4	115	3240	3340	4332		
0013	0005	40	1	WH	8.5	16	87	4	34	43262				
0014	0001	40	1	DF	16.4	16	89	4	97	3232	3332	4326		
0014	0002	B2	1	RC	16.6	16	82	4	78	3340	3336			
0014	0003	B2	1	RC	10.0	16	86	4	58	3338				
0014	0004	40	1	DF	16.5	16	89	4	97	3232	3332	4326		
0014	0005	B2	1	RC	13.0	16	83	4	63	3336	3316			
0015	0001	40	1	DF	31.0	16	88	7	75	523201	3238			
0015	0002	40	1	DF	26.0	16	87	4	118	0006	3240	3236	3332	0006
										00--				
0015	0003	40	1	DF	28.0	16	88	4	131	3240	3226	0004	3240	3316
0015	0004	40	1	DF	26.0	16	89	4	133	3240	3240	3332	0006	4316
0015	0005	40	1	DF	29.0	16	87	4	119	5232	0004	32404	3340	

Scribner & cubic volume of cruise trees

TC PLOTTREELIST — **Plot Tree List - Volumes** — Page 1

Project COOP PO — Date 4/8/2015

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CRUISED DATE
28N	08E	17	COOP	0001	26.40	23	123	3/1/2015

Plot No.	Tree No.	Age	SI	Spp St	Trees Mo.	Ct.	DBH	16' FF	Tot Ht.	BA /Ac.	Trees /Ac.	Logs /Ac.	Net CuFt/Ac.	Net BdFt/Ac.	Total CUNITS	Total MBF
0001	0001	85		DF P	1		19.0	89	145	50.5	25.65	51.3	2,559	13,337	29	15
	0002	85		DF	1		32.5	89	175	50.5	8.77	26.3	2,918	16,918	33	19
	0003	85		DF	1		15.5	86	122	54.1	41.27	82.5	2,134	9,080	24	10
	0004	85		DF	1		24.0	89	171	50.5	16.07	64.3	2,823	15,271	32	18
	0005	85		DF	1		24.6	90	168	49.4	14.96	59.8	2,813	15,560	32	18
	0006	85		DF	1		26.0	89	167	50.5	13.70	41.1	2,834	15,203	33	17
	0007	85		DF	1		28.0	86	181	54.1	12.65	50.6	3,215	17,328	37	20
	0008	85		DF	1		26.0	85	167	55.4	15.02	45.0	3,016	15,466	35	18
0001					8		22.7	88	153	414.9	148.08	421.0	22,312	118,162	256	136
0002	0001	85		RC	1		13.0	85	100	38.4	41.71	83.4	1,125	3,754	13	4
	0002	85		WH	1		12.0	90	109	49.4	62.88	125.8	2,037	10,689	23	12
	0003	85		RC	1		14.0	83	133	40.3	37.72	75.4	1,621	6,790	19	8
	0004	85		WH	1		21.0	89	135	50.5	20.99	63.0	2,521	15,116	29	17
	0005	85		RC	1		11.5	86	100	37.6	52.07	52.1	846	3,645	10	4
	0006	85		RC	1		11.5	85	72	38.4	53.31	53.3	791	3,198	9	4
	0007	85		WH	1		20.5	89	129	50.5	22.03	66.1	2,636	14,100	30	16
0002					7		13.9	87	106	305.2	290.72	519.1	11,578	57,293	133	66
0003	0001	85		DF	1		19.7	86	146	54.1	25.55	76.7	2,525	10,987	29	13
	0002	85		WH	1		17.0	87	118	52.8	33.53	100.6	2,242	12,740	26	15
	0003	85		RC	1		12.7	80	101	43.4	49.34	49.3	915	2,961	11	3
	0004	85		WH	1		10.5	89	62	50.5	83.98	84.0	1,127	5,039	13	6
	0005	85		DF	1		20.0	90	119	49.4	22.64	45.3	1,841	9,507	21	11
0003					5		14.6	86	96	250.2	215.04	355.8	8,650	41,233	99	47

Cruise summary report

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: COOP_PO

Page 1
Date 4/8/2015
Time 6:09:17PM

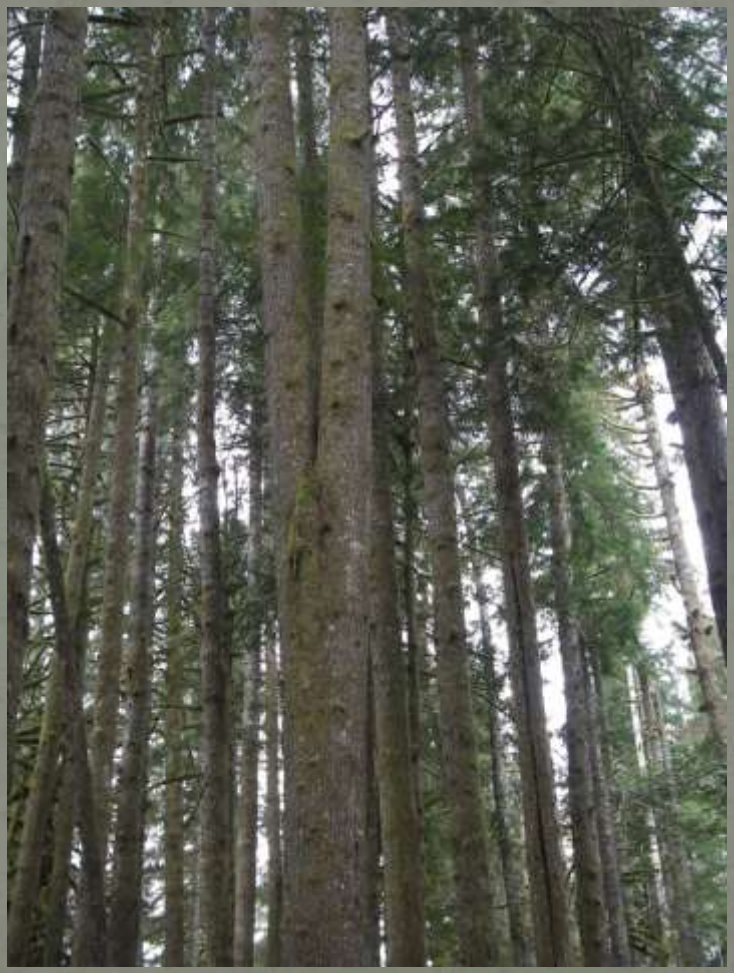
T28N R08E S17 T0001

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
28N	08E	17	COOP	0001	26.40	23	123	S	WE

T28N R08E S17 T0001

Spp	ST	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-15	16-30	31-35	36-99	Average Log: Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CL	CL	5	3.2	2,166	2,097	55				100			100		32	19	495	2.88	4.2
DF		DO	2S	43	.7	17,126	17,001	449			52	48		3	10	87	37	15	326	1.72	52.2
DF		DO	3S	22	.4	8,775	8,738	231		100			0	5	26	69	35	9	112	0.72	78.1
DF		CS	3S	6		2,297	2,297	61	100				1	31	16	52	28	6	36	0.33	62.9
DF		OS	2S	4	6.7	1,843	1,719	45				100		10	90		30	23	638	3.84	2.7
DF		RO	3S	3	.0	1,077	1,077	28		13	63	25		8	5	87	33	12	215	1.33	5.0
DF		PU	PU			165	165	4	37		63		63			37	22	10	60	0.75	2.8
DF		PO	PO	17		6,541	6,541	173		81	19			2		98	78	10	532	1.33	12.3
DF	**Totals**			68	.9	39,989	39,634	1,046	6	36	27	31	0	5	20	74	36	10	180	1.04	220.3
WH		DO	2S	35	.4	5,440	5,416	143			84	16		4	26	70	36	13	289	1.34	18.8
WH		DO	3S	47	.4	7,446	7,415	196		87	13			1	23	76	37	10	145	0.74	51.0
WH		CS	3S	16	4.1	2,558	2,454	65	84	16				20	6	74	34	6	55	0.37	44.3
WH		PU	PU	2		179	179	5	100					100			27	6	47	0.41	3.8
WH	**Totals**			26	1.0	15,624	15,465	408	14	44	36	5		6	21	73	35	9	131	0.69	117.8
RC		DO	3S	100	2.3	3,371	3,293	87	45	31	16	8		4	14	82	36	7	75	0.58	43.8
RC	**Totals**			6	2.3	3,371	3,293	87	45	31	16	8		4	14	82	36	7	75	0.58	43.8
Type Totals					1.0	58,985	58,392	1,542	10	38	29	23	0	5	20	74	36	9	153	0.88	381.9

What the heck do I do with a forked tree?



How to Deal With Forked Trees

The simplest way to deal with merchantable forked tops is to treat each top as a separate tree. They are taken in or out just as you would a normal tree and cruised on their merits.

Treating forks in this manner gives an accurate logs per acre volume. Using an RD1000, with it's more precise inclination scale, rather than a Relaskop, may make this easier.

If one fork is merchantable and not too different in diameter from the stem below, accurate volume can be determined by using inch deductions on the log(s) above the deformity.

If precise trees per acre are needed for some reason, trees that are forks can be designated using the *STATUS* column in SuperACE.

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2. Have cruising guidelines that reflect preferred or market log lengths.
3. Use equipment that allows quick and accurate measurements and checking: laser, handheld computer.