Getting the Most Out of Measuring Logs

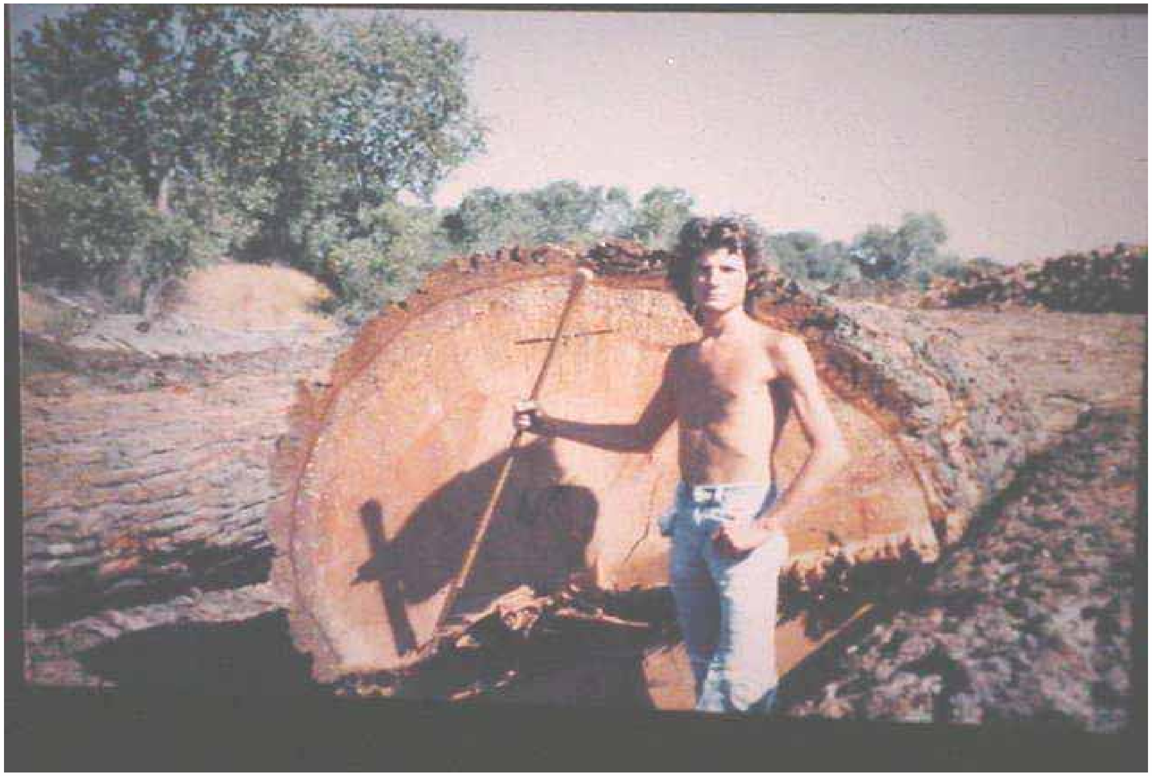
Who is this?

When is this?

Where is this?

What specie?
(the log)

The weight?
(the man)



Scaling Defined

- The log scaler is an occupation in the timber industry. The Log Scaler measures the cut trees to determine the scale (volume) of the wood to be used for manufacturing.

- The scale is used for payment, quality control and inventory purposes.

Traditional Duties and Responsibilities of Scalers

- Must have complete working knowledge of scaling principals and apply them accurately and consistently.
- Understand log grades
- Understand how to operate the recording device and enter all log data accurately.
- Scale logs productively
- Accurate specie identification
- Accurate data entry into inventory system
- Communicate any quality or other load issues with appropriate individuals.

Adding Value to the Scaler

- Data Collection and Reporting
  - QC Reporting
  - Log attributes
  - Dual Scaling
  - Check Scaling
- Log Inventory and Usage
  - Usage
  - Inventory
- Mill Studies
  - Scaler's role
    - Traditionally
    - Value added
- Training
- Summary

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Data Collection and reporting

QC Reporting

SCALERS QUALITY CONTROL REPORT

SALE:	THREE CREEKS 1	1	BK	Break		
		2	LM	Limbs,Burls		
LOGGER:	93336-BRUCH BROS LINE LOGGING	3	W	Wrong Sort		
		4	U	Unsquare Bucking		
TICKET NO:	294701	5	ST	Small Top		
		6	D	Logging Damage:		0
PC UNIT CONTACT:	PAT CAFFREY			top split		
				butt split		
DATE SCALED:	7/11/2008			roller damage		
				limb pull		
SCALER:	FAITH BENGTSON			loader damage		
				other		
		7	IL	Improper Length		
COMMENTS:	Approx. half of the cut short logs were	8	M	Metal Object		
	studs cut to 10'6" and the other half were	9	SW	Sweep,Crook		
	cut 20'6". One was a large peeler cut	10	LB	Improper Long Butt		
	34'7".	11	Y	Fork,Crotch		
		12	R	Rot		
		13	L	Cut Long		
		14	S	Cut Short		45
		17		Unmerchantable		
			TOTAL QC ERRORS			45
			TOTAL PIECES			107
			QC%			42%

Data Collection and reporting

QC Reporting

- Picture is worth one thousand words:
  - All scalers need a decent digital camera!

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Data Collection and Reporting

Log Attributes

- In addition to recording the usual attributes (specie, length, diameter & grade) scalers should also record unique characteristics such as:
  - Dead Logs
  - Blued Logs
  - Clear Oversize Fir logs
  - Clear Pine Logs
  - For specialty products like:
  - House Logs
  - Blued Paneling
  - VG Fir Flooring
  - Clear Veneer Slicing Cants

  Communicating these special log attributes to management can yield exceptional returns to a log that otherwise would have less than average value.

Data Collection and Reporting

Log Attributes

An Example:

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- Green LPP & ESLP that make house log specs are identified, scaled and sorted out.
- Logs are loaded in special bunks for drying.
- Once bunks are full logs are then loaded into the kilns for drying.
- A green truck load of LPP is worth about $2300, a truck load of dry house logs is worth about $6000 a truck.

➢ ***Now That's Adding Value!***

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Data Collection and reporting

- Dual Scaling
  - Modern field computers can be programmed to calculate multiple types of volume with very little to no additional effort from the scaler.
  - Can be Scribner/cubic (cubic ft. or m.); short log/long log; Scribner/JAS; etc.
  - This data is very valuable for:
    - predicting recovery
    - closing the loop on log usage via mill scanners
    - providing data for log purchases or sales outside of the region
    - reconciling weight and cruise volume to scale volume
    - testing and reconciling mill scanner data

Data Collection and Reporting

- Check Scaling
  - Both check scaler and scaler being checked, benefit.
  - Promotes discussion on difficult logs.
  - Helps create scaler accuracy and consistency.
  - Identifies scaler deficiencies and strengths.
  - Over all scaler abilities are increased.
  - Mill benefits from a consistent, highly skilled scaling team.

CHECK SCALE REPORT

DATE OF CHECK: 7-27-2006
COMPANY: Plum Creek
LOCATION: Evergreen
SCALER:
CHECK SCALER:

REMOTE:
WITH KNOWLEDGE: 100%
SCRIBNER: X
CUBIC:

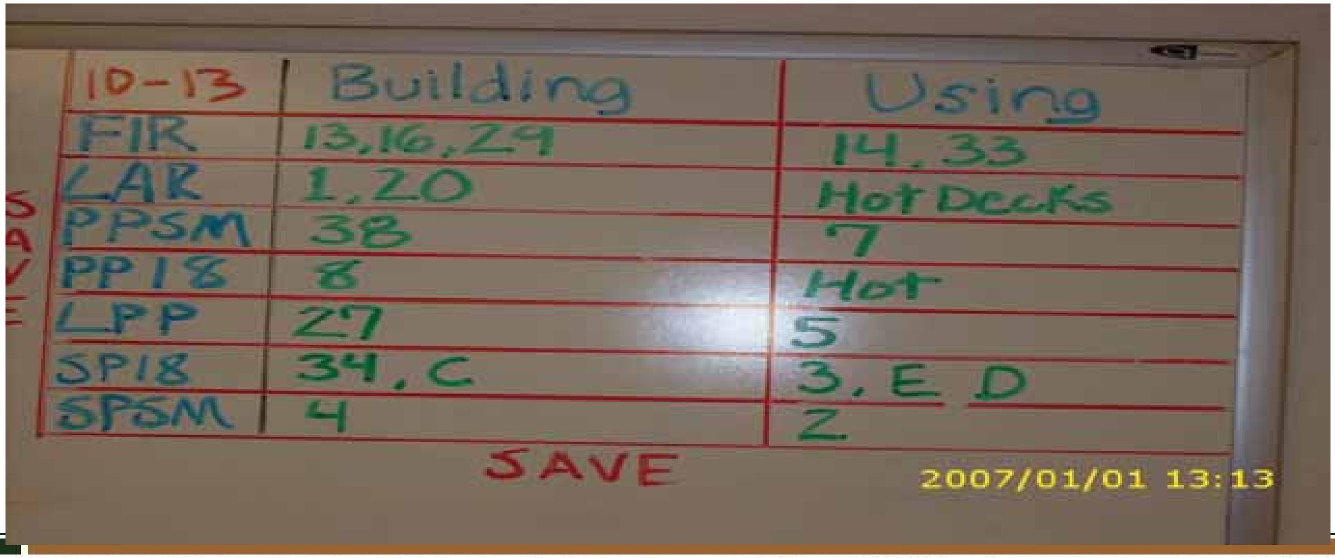
SALE NAME AND LOAD NUMBER		NUMBER OF LOGS		GROSS SCALE		GROSS VARIANCE + OR (-)		NET SCALE		NET VARIANCE + OR (-)		% DEFECT		QUALITY ERRORS # OF LOGS	
	SP	INSP	SCLR	INSP	SCLR	VOL.	%	INSP	SCLR	VOL.	%	INSP	SCLR	INSP	SCLR
Grand Scheme	WL	27	27	2720	2690			2600	2570						
Brand 250940	DF	13	13	650	630			590	550						
Ticket #1090836	ES	11	11	500	460			480	420						
	LP	86	79	4120	3850			3420	3360						
	AF	12	11	400	330			340	280						
	DSL	3	4	330	360			230	260						
	UM	0	1	0	20			0	0						
	DLP	26	34	1320	1650			720	880						
	BLP	12	10	520	410			450	330						
TOTAL		190	190	10560	10400	-160	-1.5%	8830	8650	-180	-2.0%	16.4%	16.8%	11	21

Log Yard Inventory

Usage

- Value added scaler will:
  - Help control deck building, depletion, numbering and dating.
  - Insures that scanner/deck factor tests are done monthly.
  - Update %defect, average log length, & CCF/MBF ratios regularly.
  - Validates inventory derived usage and scanner usage.

<u>Usage Tool</u>

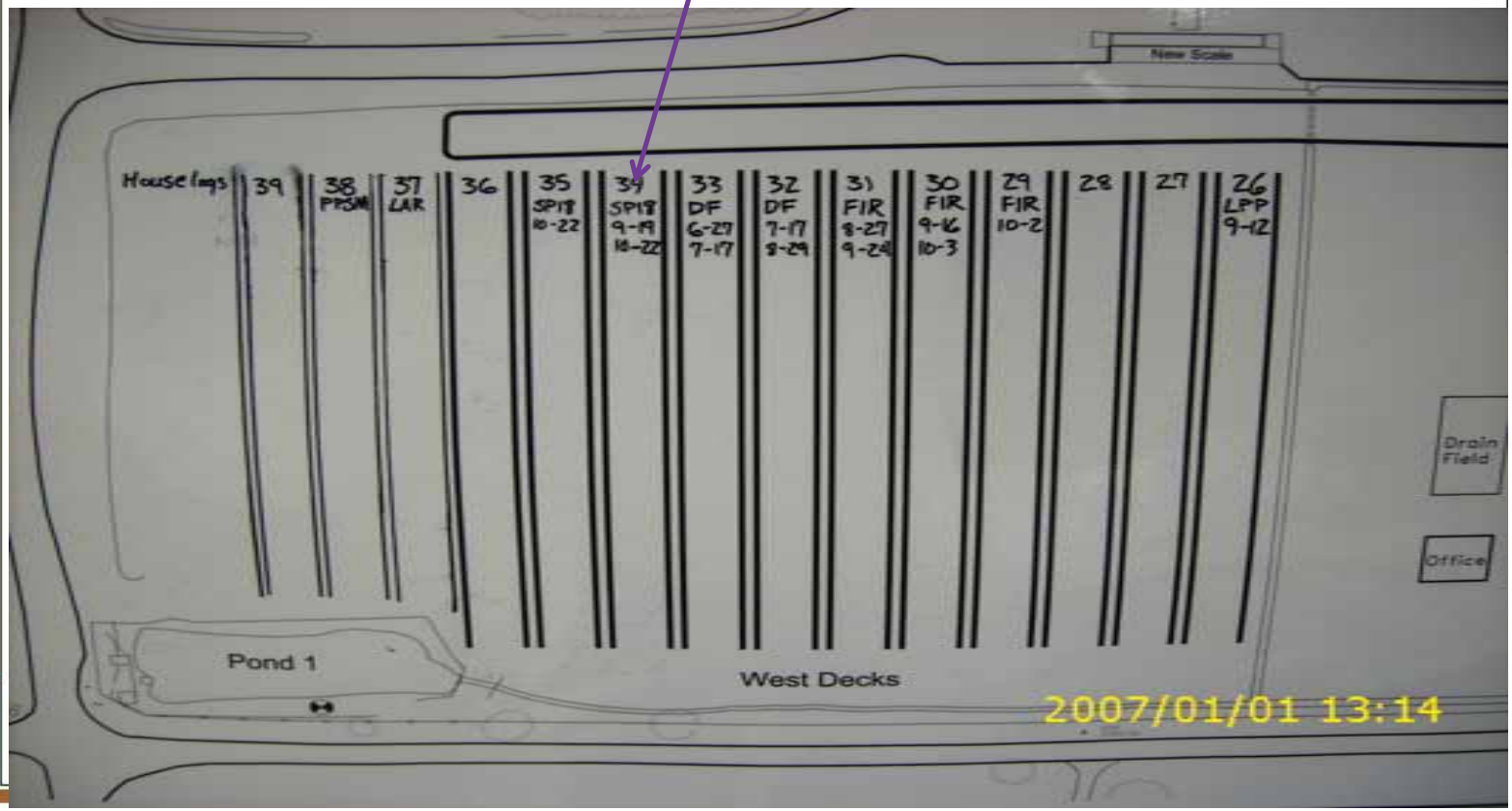


Log Yard Inventory

Usage

Deck map displaying:

Deck #, Specie, Dia. Class,
Start date & Date closed



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Log Yard Inventory

Usage

- Test Deck Work Sheet
  - Logs scaled into deck
  - Deck measured
  - Cubic volume calculated (H x W x L) note: W= average log length in deck
  - Deck factor calculated (scaled cubic/calculated cubic)
  - Scanner correction factor calculated (scaled cubic/scanner cubic)

Test Deck Data and Gross Deck Factor Computations

			A	*B*		C	D	E	*=(C x D x E) F*	*=A/F*	G	*=A/G*
			SCALER DATA			DECK MEASUREMENTS			*Calculated*	*Gross*	Machine Center	*Scanner Gross*
			---------CUBIC---------									
			----		Defect			Avg log	*Cubic*	*Deck*	Scanned	*Correction*
Date	Specie	Sort	*Gross*	Net	%	Hght(ft)	Length(ft)	length (ft)	*Volume*	*Factor*	Cubic	*Factor*
June 2006	SPR	18	*8,881*	8,326	6.26%	12.00	45.00	26.60	*14,364*	***0.6183***	10,084	*0.8807*
June 2006	LPP	SM	*8,198*	7,753	5.42%	12.00	38.00	26.17	*11,934*	***0.6869***	8,970	*0.9139*
July 2006	PP	18	*9,560*	8,905	6.86%	10.00	64.00	25.10	*16,064*	***0.5951***	10,545	*0.9066*
July 2006	PP	SM	*4,142*	3,842	7.25%	6.75	38.00	28.60	*7,336*	***0.5647***	4,624	*0.8958*
September 2006	SPR	SM	*4,269*	3,978	6.82%	8.00	26.20	30.10	*6,309*	***0.6766***	5,010	*0.8521*
September 2006	LPP	SM	*8,475*	8,040	5.13%	9.34	50.50	26.10	*12,311*	***0.6885***	10,086	*0.8403*
October 2006	PP	18	*9,571*	8,930	6.70%	10.60	64.00	23.30	*15,807*	***0.6055***	9,678	*0.9889*
February 2007	LPP	SM	*8,780*	8,174	6.90%	9.34	60.00	23.64	*13,248*	***0.6627***	9,259	*0.9482*
April 2007	SPR	18	*9,265*	8,575	7.45%	10.36	60.00	27.10	*16,845*	***0.5500***	10,890	*0.8508*

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Log Yard Inventory

Variance Between Physical and Log Summary
Dec 2007

Last Month			
Species	Physical	Log Sum	Difference
Fir	339	331	8
P Pine	1,331	814	517
LP Pine	1,798	1,418	380
Spruce	966	824	142
WF&AF			-
IWP			-
Cedar		1	(1)
NGTS Accrual		981	(981)
Total	4,434	4,369	65
Percent Difference			1.47%

Current Month			
Species	Physical	Log Sum	Difference
Fir	355	497	(142)
P Pine	2,567	1,362	1,205
LP Pine	2,990	2,766	224
Spruce	1,544	1,242	302
WF&AF			-
IWP			-
Cedar	4	1	3
NGTS Accrual		1,537	(1,537)
Total	7,460	7,405	55
Percent difference			0.74%

Log Yard Inventory

Physical

- Value added scaler will:
  - Accurately measure the decks mid month and end of each month.
  - Records deck information into the deck work sheet
  - Double checks all entries for accuracy
  - Tracks log inventory throughout the month so there are no surprises.

Log Yard Inventory

Physical

- Log Measurement Specialists:
  - Enters data on the Deck Worksheet
    - Deck #
    - Sort (generally specie by diameter class)
    - Status (building, depleting or closed)
    - Date deck was started and date closed
    - Length and height of deck (width is derived from “Diver” or deck test data)
    - Volumes automatically calculate from deck test factors

Deck Worksheet

Deck #	Sort	Status	Starting	Ending	Length	Height	Avg. Width	Gr. Factor	Net Factor	Gross CCF	Net CCF	Gross MBF	Net MBF
1	LARPLY	Building	3-Oct-08		260	12.03	30.24	0.6271	0.5785	593.18	547.20	340.91	305.70
2	SPSM	Closed	30-Jul-08	14-Oct	261	25.50	30.76	0.6429	0.6225	1,316.17	1,274.32	792.88	763.07
3	SP18	Closed	25-Jul-08	16-Sep-08	304	21.14	28.78	0.5859	0.5635	1,083.66	1,042.26	552.89	508.42
4	SPSM	Building	12-Oct-08		99	13.08	30.76	0.6429	0.6225	256.08	247.94	154.27	148.47
5	LPPSM	Depleting	16-Jul-08	14-Sep-08	360	21.94	28.30	0.6627	0.6224	1,481.30	1,391.24	809.45	695.62
6	PPSM	Closed	9-May-08	17-Jul-08	484	26.96	28.17	0.6387	0.6019	2,347.73	2,212.51	1,504.96	1,418.27
7	PPSM	Depleting	10-Apr-08	14-May-08	318	26.02	28.17	0.6387	0.6019	1,488.74	1,402.99	954.32	899.35
8	PP18	Building	18-Jul-08		437	22.27	26.26	0.5935	0.5603	1,516.63	1,432.00	762.13	688.46

Log Yard Inventory

Physical

➢Final result is an accurate inventory ready for the plant accountant:

Log Yard Inventory | 28-Feb-07 | 6:00am

	MBF				CCF				Net
	Gross	Defect	Net	% Defect	Gross	Defect	Net	% Defect	CCF/MBF
LPPSM Total	1257.86	167.23	1090.63	13.3%	2301.88	120.62	2181.26	5.2%	2.00
PP18 Total	3130.31	319.63	2810.68	10.2%	6229.32	383.10	5846.22	6.2%	2.08
PPSM Total	6245.41	437.80	5807.60	7.0%	9742.83	682.97	9059.86	7.0%	1.56
SP18 Total	2415.08	217.32	2197.75	9.0%	4733.55	228.16	4505.40	4.8%	2.05
SPSM Total	796.72	40.80	755.91	5.1%	1322.55	60.18	1262.38	4.6%	1.67
DF-LARSM Total	50.40	11.82	38.58	23.4%	63.00	13.23	49.77	21.0%	1.29
Sawmill Total	**13895.77**	**1194.61**	**12701.16**	**8.6%**	**24393.13**	**1488.26**	**22904.88**	**6.1%**	**1.80**
WFPLY	13.60	1.86	11.74	13.7%	27.74	3.21	24.53	11.6%	2.09
DFPLY Total	5411.08	683.37	4727.71	12.6%	10281.05	1014.74	9266.31	9.9%	1.96
LAPLY Total	3211.46	375.29	2836.17	11.7%	5587.95	466.59	5121.36	8.4%	1.81
PLY Total	**8636**	**1060.52**	**7575.62**	**12.3%**	**15896.75**	**1484.54**	**14412.20**	**9.3%**	**1.90**
WF Stud	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00
DF/L Stud	31.16	4.90	26.26	15.7%	76.34	6.49	69.85	8.5%	2.66
Cedar	16.50	1.85	14.65	11.2%	33.00	2.09	30.91	6.3%	2.11
Mis-sort Total	**47.66**	**6.75**	**40.91**	**14.2%**	**109.34**	**8.57**	**100.77**	**7.8%**	**2.46**
Mixed	234.40	23.70	210.70	10.1%	419.57	31.89	387.68	7.6%	1.84
Grand Total	**22813.97**	**2285.58**	**20528.40**	**10.0%**	**40818.79**	**3013.26**	**37805.53**	**7.4%**	**1.84**

Mill Studies

- Traditionally
  - Whether it is batch test, gorilla test or a scanner test the traditional role has been for the scaler to help select, scale the logs and then turn the scale data over to someone else to use for analysis.
- Value Added Role
  - Same as traditional, plus:
    - Helps plan for tests
    - Is assigned a specific process to monitor & audit during the test
    - Helps compile the data and input into testing model

Training

- A fully competent scaler will need to add to his or her resume:
  - A willingness and desire to:
    - Learn and use the log inventory system
    - Learn and use basic computer applications like excel and word
    - Learn and use your company's log data base (if they don't have one then create one)
    - Learn to be a good communicator
    - Learn to be a leader
    - Learn to be a teacher

Summary

- Adding Value to Log measurement is:
  - Low cost
  - Most data reporting systems in place just under utilized
  - More challenging job hence more job satisfaction for scaler
  - More accurate inventory reporting with fewer inventory swings
  - Better communication and team play between log yard and mill
  - Fewer surprises at the end of each month
  - Ultimately provides more revenue to the bottom line