**HALCO Software Systems Ltd.**

SAWSIM®

Sawmill Simulation Program

SAWSIM® is a very flexible computer program that can accurately model the processing of logs in any sawmill. With over 30 years of development, SAWSIM® is widely recognized as the most powerful sawmill simulation program available. Using SAWSIM®, virtually any "What if...?" question you may have about your operations can be answered.

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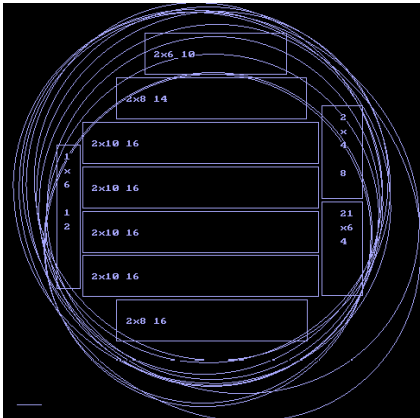
Dimension Cant Breakdown
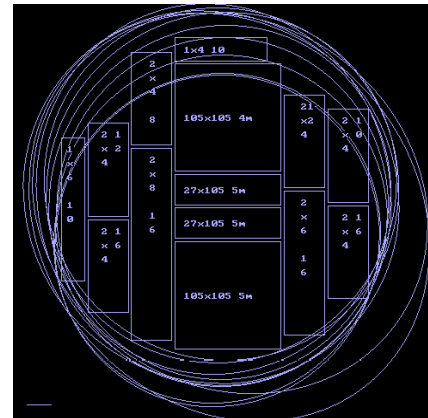
Export Cant Breakdown

SAWSIM® Applications:

Typical applications of SAWSIM® include the analysis of the following scenarios:

- Evaluation of the benefits of mill improvements such as optimum bucking, primary breakdown optimizers, cant optimizers, saw kerf or target size reduction, and improved log alignment systems; determine accurately the ROI for capital projects.
- Effects of a change in lumber product mix, such as a shift in lumber width production or the addition of an export product.

- Evaluation of alternative mill design or modernization options, including mill flow and machine piece count evaluations.
- Effects of a change in mill log diet.
- Effects of log supply allocation to different breakdown lines, different mill sites, pulplog vs. sawlog considerations, etc.
- Effects of a change in log breakdown policy (eg. wide center cant vs. narrow center cant plus sideboards, full-taper vs. half-taper, etc.).

over →

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SAWSIM® Printout Information

In addition to end-view and 3-d log plots, the **SAWSIM®** printout for each log is as follows:

Log Ident	Sawing Pattern	-- Offset -- Hor	-- Offset -- Ver	Dia in	Len ft	Taper in/ft	Sweep in	No. Logs	Pcs Lbr	BdFt Lbr	Log Vol	Lbr Recov	Chip Vol	Lumber Cost $	Cost $	Gross $	Value Recov
33/1	Quad-10	-0.375	2.50	13.55	16.50	0.105	1.7	1.00	10	166.0	19.03	8.725	0.055	45.33	1.50	50.25	264.0

	--Chips-- Vol	$	-Sawdust- Vol	$	Shavings Vol	$	Dry-trimg Vol	$	Shrinkage Vol	Fin-lum Vol	Total Vol
	0.055	3.99	0.025	0.18	0.014	0.09	0.009	0.67	0.753	9.495	19.029
%	24.54		11.10		6.41		4.10		3.96	49.90	100.00

Machine	Quad	Gang #1-BdEdg	ReEdger	Resaw	Trimback	Trimmer
Passes	1	1	2	3	1	4	10
Cost $							1.50

"Totals and Averages" may be printed to show the total results for a distribution of logs that may represent a complete shift's production. In addition to the printout information above, the "Totals and Averages" will show the overall lumber product distribution.

Specific Program Features:

Specific features of the **SAWSIM®** program allow simulation of the following:

- Optimum or manual bucking of stems.
- Production of many lumber sizes with different wane rules for different products.
- Different saw kerfs and target sizes for different machines.
- Any type of log & cant positioning, including full-taper, half-taper, "centering-roll", etc.
- Curve-sawing.
- Addition of edger, trimmer, and cant optimizers, plus the ability to account for imperfect manual edging, manual trimming, and other sources of mis-manufacture.
- In grade-sawing mills, different grade regions can be defined in the log, and the volumes of different lumber grades produced by different sawing policies can be determined.
- Specification of products by vertical grain, flat grain, mixed grain, heart-center, and free-of-heart-center, and production from the appropriate position in the log.

Many other features allow simulation of virtually any mill layout and breakdown policy.

Using SAWSIM®

SAWSIM® can be purchased for in-house use, or studies can be undertaken on a consulting basis by staff of HALCO Software Systems Ltd.

Modeling by Simulation

SAWSIM® is an example of HALCO's approach to simulation and optimization. This is to develop detailed models of each step in the process, and to validate these against operating statistics. By developing detailed models, the user can be confident that situations for which there is no operating experience, but which should be considered, will be modelled with sufficient accuracy.