IMPROVING PROFITS BY WORKING SMARTER

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Abstract

Sawmills are in business to make profits. The more the better! Maximizing lumber recovery may not be the same as maximizing profits. Optimizing lumber recovery must, by definition, maximize profits. Optimizing a mill is expensive and can include "Optimizing" hardware for: bucking, primary breakdown, secondary breakdown and trimming.

Where does a manager start the optimization process? How do you choose a logical path to follow? When price changes occur how can a mill adjust for continued optimization?

A computer simulation program for sawmills was developed by Mr. Howard Leach in 1974. The program consists of over 25,000 executable Fortran statements. The process is called SAWSIM.

Mr. Leach joined the Carroll-Hatch group in the spring of 1982 when Carroll-Hatch Systems Ltd. was formed. The computer simulation service is now marketed through Carroll, Hatch & Associates, Inc.

Over the time the program has been put to use it has been enhanced to offer wider and wider simulation possibilities. The range of applications now covers simple dimension mills at one end of the spectrum to carriage type headrig systems at the ever expanding other end of the spectrum.

The use of SAWSIM provides a mill manager with a powerful analytical tool that helps operate his mill at the "optimum" after consideration of the variables of log supply, market demands and his mill capabilities.

Outline of Slide Presentation

Definition of Sawmilling

Conversion of round logs to marketable lumber products through a conversion facility.

Profitability in sawmilling is the ability to convert logs to lumber making money.

How Does One Work Smarter in Improving Sawmilling Profits?

Must understand the three major variables and their inter-relationship.

You must know your logs, their variability and how they affect your profitability.

You must know your product markets, their variability and how they affect your profitability from your log supply and manufacturing.

You must finally know how to convert or manufacture a log into a marketable lumber product profitably.

How to convert one to the other:

Different Machinery	Recoveries
People	Efficiencies
Quality Control	Change
Different Profitabilities	

Era of sawmilling technologies:

1800 Manual Sawing	Recovery
1850 Mechanical Sawing	Manpower
Mechanization	Electronic Era
Mill Flow	Optimization of Machinery
Chip-N-Saw Production	Profitability – Audit
	Refined Management

Those people that are still in business today are evidence of the successes of conversion of logs to lumber. Do not have the margins to work with. Therefore we must have much tighter control or management.

But, to manage the sawmill or the conversion of logs to marketable products we must be able to put all of the variables of logs, markets and conversion together in an optimal way.

How many variables? Far too many. Impossible?! NO. The answer is in the black box computer.

Let's spend a few minutes looking at sawmilling and computers, and then come back to our topic of Improving Sawmill Profits by Working Smarter!

Computers and Their Technology

What are they? They are a tool. Just like a slide rule, just like a calculator, they are a tool that must be used properly.

It is the user that determines how effective these tools are.

What is available today in terms of sawmilling computers.

On-line Systems for Optimization and Production Control

Log Bucking	Trimmer Optimization
Headrig Sawing	Sorters
Edger Optimization	

Management Systems

Data Measurement	Data Analysis
Data Retrieval	System Analysis

The real power of the computer is what it can analyze at one time, efficiently and effectively. This is what we will concentrate on today. Some of the components are examples of systems.

Certainly the computer as a tool and its ability to analyze many variables and relationships all at once provides us with the challenge to manage our systems and optimize our profits.

There are a number of management systems that have been implemented, for example:

    The standard accounting system
    A log scaling/inventory system
    A lumber inventory system
    A lumber marketing program
    SAWSIM

Another example, that we will spend a bit of time on today, is called SAWSIM by its trade name. This system attempts to incorporate many of the log, market, and conversion variables into one system that can assist in improving sawmill profits by firstly knowing what you are doing, and then working smarter.
Let's look at some examples of what SAWSIM can do.

Log Variables and Analysis

1. Lumber return for straight and crooked logs. 10.06" x 16.63'
2. Log taper.
3. Log diets.

Market Variables and Analysis

1. Market return for given log diet.
2. Alternative market return for given log diet.
3. Combination market return for given log diet.

Conversion Process and Analysis

Log Bucking   Machine Optimization
Alternative Cutting Patterns   Alternative Mill Design
Fiber Recovery   Mill Profitability

These are only some of the variables that this management system tool can analyze quickly and efficiently.
SAWSIM simulates the operation of a sawmill in a computer. It shows the results of sawing logs without actually processing them.
SAWSIM calculates the effects of:

        Log supply   Equipment
        Operating Procedures Product Mix

On:

        Piece counts.
        Lumber and by-product volumes and values cash flow.
        SAWSIM assists management to select the most profitable alternatives.

How often do we sawmill managers need to analyze the influence of changing some major variable and yet we are not adequately equipped to analyze this change other than with gut feel.

Now, these tools such as SAWSIM are available that can analyze the interrelationship of many hundreds of variables of logs, markets, and conversion practices. It is only a tool like a slide rule or calculator with much more power. Effectively the user must know what he is doing with the tool.

In Summary

Today we have looked at just a few of the many variables involved in the sawmilling process of converting logs to marketable products in a conversion process. We looked at all the variables and concluded that manual analysis of all the variables was next to impossible.

We looked at some tools that are available to help us analyze our conversion of logs to products, and, finally we looked at some examples of using these tools to work smarter to improve our sawmilling profitability.