

EDUCATION AND SAWMILL TRAINING

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Everybody requires education and a certain amount of training! This applies to all people regardless of vocations. It is becoming more apparent, each year, particularly in the lumber industry that more education and sawmill training is necessary, so that optimum yield and value can be realized from the raw material.

Our industry is going through a time of change--automation, manpower, forestry restrictions and regulations (total utilization), handling and shipping, competitive products and spiralling costs, thus, the need for better trained personnel.

Although the industry in B. C. , since 1922, has had an educational program, it does not have adequate facilities to properly train sawmill personnel. Before I get into the sawmill training program I would like to first talk about the COFI educational program.

The Quality Control Dept. of the Council of Forest Industries of B. C. started an educational program back in 1922. This was necessitated by the lack of uniformity in grading, misrepresentation of the rules and the existence of a wide variation among operating mills in their interpretation of the grading rules. Consequently, a large amount of material was being degraded and various evils were in practice in the grading and handling of the product.

The COFI Educational Program is outlined as follows:

It is conducted in 12 different locations on the coast, in the Interior of B. C. in approximately 15 centres.

The instructors are hand picked individuals; lumber inspectors, grading agency supervisors, Mill Quality control supervisors, graders who have obtained top marks or other personnel with vast experience in lumber grading or personnel who have won lumber grading contests. The educational classes are directed and supervised by the Q. C. & Educational department of COFI.

REGULAR LUMBER GRADING CLASS SCHEDULE

Lesson No. (lessons are weekly (a. m. & p. m.) approx. 2 to 3 hours)

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|----|----------------------------------------------|
| 1 | Registration, Wood Structure, Irregularities |
| 2 | Boards, (Sufaced) NLGA rules |
| 3 | Light framing |
| 4 | Joists and planks |
| 5 | Joists and planks |
| 6 | Rough dimension - R List rules |
| 7 | Rough green clears --R List rules |
| 8 | Industrial Clears (S2S) NLGA |
| 9 | Review Test, (Practical & Theory) |
| 10 | Review, BDS, LF, J&P, CLRS, -NLGA |
| | Review, Rgh Dim, CLRS, -R List |

Lesson No.

- 11 Door Stock - R List
- 12 Door Stock, Factory Fitch - R List
- 13 Post & Tbrs, Beams & Stringers, Heavy CLR Lecture, - NLGA & R List
- 14 (Saturday) P&T, B&S & Heavy CLR Practical, NLGA & R List
 (Saturday) Practical Review (75 Pcs)
 (Saturday) Theory Examination (2 Hours)
 (Saturday) Practical Examination (100 Pcs) (4 Hours)
 &
 (Sunday)

The chief purpose of the grading classes is to explain the fundamentals of lumber grading practice to those engaged in the production, distribution, or use of lumber; also to teach a uniform application of the rules, so that the same grade will represent the same value and can be used for the purpose, regardless of what mill may have produced the lumber.

There is no easy way to become an expert grader, but these classes are helpful to everyone who attends them in learning the fundamentals of correct lumber grading. This knowledge, together with practical experience and further study, is the surest way to attain that goal.

A full and complete understanding of all lumber characteristics and grading information is essential to good lumber grading. This understanding is achieved only from study, practice and experience. Good lumber grading is no mystery, but the skill cannot be attained without study and willingness to learn.

The COFI presents grading awards and trophies to the students who have successfully obtained passing marks.

Annual Grading Exam

Highest mark for all centres	\$250.00
<u>Students writing examinations for the 1st time</u>	
1st Prize	\$200.00
2nd Prize	150.00
3rd Prize	100.00

B. C. Coast Championship Contest

To be eligible to write students must hold a valid COFI Grading Ticket.

1st Prize--COFI Championship Cup	\$500.00
2nd Prize--O. A. Lauritzen Trophy	300.00
3rd Prize--W. Ross Trophy	200.00

In addition to the prizes for the Championship Contest, supplementary prizes are awarded to those other than Class instructors, Grade Supervisors and Lumber Inspectors.

1st Prize	\$200.00
2nd Prize	150.00
3rd Prize	100.00

In the Annual Grading Examinations (as well as the Coast Grading Championship Contest), the practical part of the examination is considered of greater importance than the theoretical. For this reason, the possible marks obtainable in the two examinations are allotted as follows:

Practical - 75%

Theoretical - 25%

e. g. , Mr. C. J. Kozlik obtains in the:

Practical - 85% - 75% of this counts 63.75%

Theory - 95% - 25% of this counts 23.75

FINAL MARK obtained 87.5 %

85% or better secures a Class "A" certificate

70% to 85% secures a Class "B" certificate

Marks under 70% are considered "fail" and certificates are not issued.

Each year the COFI holds a two day "Instructors Seminar." Following the final examination, the Q. C. & E. dept. of COFI holds a two day "Instructors Seminar." The purpose of the seminar is to review last years grading exam results, discuss problems that arise at the classes, determine if other items should be taught or dropped and in general, discuss the entire educational program for the past year.

CHART

Grading Class Results (Last 6 years)

COAST GRADING CLASS RESULTS - 1971-76

Total--All Centres (Inc. Beginners)

	<u>Registered</u>	<u>Wrote Exam</u>	<u>Passed</u>		<u>Failed</u>	
			<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
1971	1869	983	663	67.4	320	32.6
1972	1678	1001	750	74.9	251	25.1
1973	1237	581	318	54.7	263	45.3
1974	1642	648	353	54.5	295	45.5
1975	623	287	154	53.7	133	46.3
1976	871	374	140	37.4	234	62.6

Beginners Only--All Centres

	<u>% of Total Writing</u>	<u>Wrote Exam</u>	<u>Passed</u>		<u>Failed</u>	
			<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>
1971	24.3	239	71	29.7	168	70.3
1972	31.4	314	126	40.1	188	59.9
1973	47.0	273	105	38.5	168	61.5
1974	48.8	316	123	38.9	193	61.1
1975	40.4	116	32	27.6	84	72.4
1976	48.7	182	27	14.8	155	85.2

THE IMPORTANCE OF SAWMILLING AND TRAINING

Before considering the importance of training in detail, it is necessary to establish certain facts about the forest products industry. Output from the forestry industry of B.C. in 1972 had a net shipping value of about \$1.8 billion, accounting for about 44 percent of the value added by all goods-producing industries in the province. The province harvests 45 percent of all the roundwood cut in Canada, with about one-half of it coming from the interior. About 74,600 people were directly employed in the industry in 1970, but it is conservatively estimated that another 138,200 receive indirect employment from forestry activities. About 27 percent of the province's workforce gain their livelihood either directly or indirectly from the forest industry. In 1969, forestry firms and employees paid \$397 million in federal and provincial taxes, \$186 million of it being paid by the industry to the provincial government. As can be seen, a viable forest industry has great importance for the economic well-being of the province and nation.

The saw and planing mill industry, as a subset of the forestry industry, is the most important secondary manufacturing industry in the province.

In 1971 it employed an estimated 27,600 persons, paid \$220.7 million in wages and salaries, produced goods worth \$905 million, and accounted for \$650.7 million in exports.

The sawmilling sector of the economy provided jobs for 33.2 percent of the total forest industry's working force making it, from an employment point of view, the single most important sector of the forest industry. It was a source of livelihood to more than half of the total Canadian saw and planing mill workers estimated at 53,000 persons.

Slightly over half of the persons employed in the Province's saw and planing mill industry worked in the Vancouver Forest District. This district comprises the southwestern portion of British Columbia including Vancouver Island.

The industry has been dynamic. It has responded to changing competitive markets, increased labour costs, different raw material sizes, and stringent grading rules. Some of the more important changes which are presently occurring (or are likely to become more important in the future) are as follows:

Small Log Utilization

The introduction of a close utilization policy has meant that a larger number of small-diameter logs are being processed, particularly in interior locations. In addition, the cutting of second growth timber on the coast will result in even more small-diameter logs being processed. "The decreased profitability of sawing small logs has had to be compensated by increased productivity, automation and by the application of updated technology."

Moreover, sawmill operators are forced to get maximum use of all resources, particularly all parts and by-products from the breakdown of a log.

New Technology

The need to process a large number of small-diameter logs, quickly and efficiently, has resulted in large capital expenditures for newer and more sophisticated machinery. Chipper headrigs, narrow kerf saws, carbide tip saws, mechanical graders, and computer optimizing models have been commonplace. In the future, greater automation and on-line computers will become even more common. The use of computers, laser beams, and high speed water jets will most likely become an accepted component of future sawmills. Such technological advances will require people of different abilities. In addition, testing facilities will be required to perfect the systems before they are introduced on a mass scale.

Larger-Sized Firms

Greater mechanization has brought about a smaller number of large capacity sawmills. In 1971, there were 627 full-time sawmills in B. C., a 61 percent drop from the 1962 figures. Production in the same period, however, rose 49 percent.

Productivity Increases

The average B. C. sawmill worker earns more money while working fewer hours than his counterpart in other provinces of Canada. In part, the industry can afford to pay workers these higher wages, because B. C. workers are more productive with the capital-intensive machinery and plant facilities than workers from other provinces. It has been estimated that the per man-hour output in Manitoba and Saskatchewan sawmills is only 64 percent of the output of B. C. mills.

The picture which emerges for the B. C. sawmill industry is a progressive one. The industry has adapted and modernized with the times. This success, however, does not require complacency. The industry will undergo major changes in the future, and there are already many improvements which could be instigated. For example, a study by the staff of the Council of Forest Industries of B. C. has shown that an interior stud mill producing 75 million FBM per year could save 8.2 million FBM (a 10.9 percent saving) worth \$712,600 through better training, set-up, and operation of the mill. A 55 million FBM per year dimension mill at the same location had potential savings of 4.1 million FBM worth \$330,500 for the same reasons. Other studies have shown \$172,600 savings in a 170 million FBM per year mill, \$189,000 at a 55 million per year mill, and \$120,000 at another 55 million per year mill.

Typical changes which bring about these savings are: bucking to the correct length, better set-up of headrig saw, improved tapering of logs, proper trimming, installing moveable light lines, better feed to the planer, firmer saw guides, improved sorting, and so forth. Sawmills which have paid attention to such changes have realized substantial savings and increases in productivity. Such changes, however, require knowledgeable people to study and isolate the problems. They also require vast re-training of operators so that they can make the correct decisions in operating their machinery. As mills become more automated, this need for training will become increasingly

important. In addition, the abnormally high labour turnover and large number of new entrants to the industry has made the need for training even more acute.

It is obvious that the sawmill industry will have to give greater attention to both human resource development and technological advances. The development of new machinery is already being actively pursued by equipment manufacturers. The possibility of tangible profits from technological breakthroughs provides the incentive for them to carry out research and development. Where the equipment manufacturers find difficulty, however, is in finding a setting where they can field test their innovations. Few mills are willing to take the risk of buying untested equipment or to have their operations interrupted while new machinery is being tested.

The area of human resource development is more of a problem. The benefits of training are not as easily recognizable while the costs are. Many mills consider training a bother--it interrupts the day-to-day operations and it requires expertise which is seldom within the firm. Losses caused by low productivity, negligence, apathy, high turnover, accidents, absenteeism and lack of understanding of job functions are all too frequently attributed to non-controllable aspects of doing business. Usually they are passed off as being caused by unreliable employees with the wrong character. In part, it may be true that employees, especially younger ones, have different attitudes to their work. Of more major cause of the problem, however, is poor design of the job and a lack of preparation of the employee for that job. What is needed is the design of jobs with a sense of purpose. Employees are not dumb; they desire purpose, progression, feedback, recognition, and a sense of achievement from their work. These attributes can be achieved through better design of jobs and proper training of workers to fill them. With training, a worker will receive a better understanding of his job, a sense of purpose and achievement, and recognition as a person with valuable skills and knowledge. Surprisingly, too few firms realize that the design of jobs and training for them are variables they can manipulate to get better overall performance.

The firms most adept at training are the large integrated forestry firms. They are large enough to support their own specialized training staff which put on very good programs of management development, supervisory skills, and on-the-job instruction. The training at the operator level, however, still requires improvement. The supervisor is generally responsible for on-the-job training--a task for which he has little training and which he frequently regards as being superfluous. Medium-sized firms usually appreciate the need for greater training, but they often are not large enough to support their own training staff. They too have the problem of convincing and helping foremen and supervisors to do a better job of on-the-job training. In the small firms, only the progressive few realize the need for training. Since they appreciate the need and since they are small, these progressive small firms generally do a fairly good job at their own training. The majority, however, do not even realize that training could be beneficial to them.

It is realized that a 10% productivity increase by 1980 will save the industry \$100 million, then the necessity of analyzing the feasibility of sawmill training appears as a project which should have been analyzed years ago.