A LOSS OF $1,000,000.$\frac{00}{}$ ANNUALLY

Arthur A. Vandermeulen
Council of the Forest Industries of British Columbia
Vancouver, British Columbia

If that was happening in your company, would you be interested in "Quality Control?" Are you wondering how this loss could happen? (1) Inaccurate log bucking, (2) Needless waste at the edgers, (3) Unnecessary waste at the trimmers, (4) Overtrimming at the timberdecks, (5) Poor practices at the headsaw and resaw. "That's how it could happen."

But first, I would like to give you some background on the Quality Control Department of the Council of Forest Industries of B. C. The Quality Control Department was first established as a one man grading and inspection department just prior to World War I, with an education program being added in 1922. This was necessitated by lack of uniformity in grading, misrepresentation of the rules and the existence of a wide variation among operating men in their interpretation of the 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 Quality Control Department is primarily concerned with maintaining a high standard of uniformity in grading within the industry. Today the six-man department performs a variety of functions, in addition to the important grade checks and educational classes.

Grade checks are carried out in member mills on lumber in various categories such as: Clears, Dimension, Timbers, etc. These enable the Quality Control Department to inform mill management of any discrepancies in the quality of the product. In this way, a record of grading standards is established that will assist, if required, in dealing with complaints.

In recent years, the Quality Control Staff has become an industry-wide co-ordinating medium which focuses interest on manufacturing processes through seminars and surveys. The Department offers practical grading instruction to assist machine operators in their decision making.

Production surveys, introduced recently, analyze manufacturing procedures from the jack ladder to the green chain. A seminar for grading class instructors is held annually to ensure uniformity of interpretation and application of the grading rules. This is accomplished by informing those present of changes in the grading rules which are necessitated by ever changing demands on lumber in modern construction. The instructors are also up-dated on new instructional techniques adopted by the Quality Control Department.

The member companies of the Council of Forest Industries realize the importance of policing themselves and actively support the efforts of the Quality Control Department to improve and maintain standards throughout the industry.

The objective of Quality Control is to ensure that the end product of your operation is what the company wants it to be - whether we are talking about a lumber, steel, glass or any product.

Quality Control in the lumber business started in an organized way less than 10 years ago. Up until about 8 years ago, the Council of Forest Industries was involved strictly in grade checking and in

educational programmes for graders and tallymen. Even today, most mill Quality Control Programmes are primarily concerned with grade checking.

The main reason for delay in the rapid and general acceptance of Quality Control in lumber manufacturing plants is the tremendous amount of variation in and the resulting complexity of a true Quality Control Programme. Some of the reasons are: (1) Every log - being created by nature - is a little different from every other log. (2) Every log can be cut up in a number of different ways to yield a variety of products - no two people will consistently agree how any given log should best be broken down to give best financial returns to the mill. (3) No two manufacturing plants are the same. (4) Differences in markers and in species also compound the problem of setting up a Quality Control Programme.

Let us now look at Quality Control at the practical level. There are many points which should be considered in setting up a Quality Control Program. The following are just a few samples of key problem areas.

1. You must get everyone on your side and demonstrate to each person concerned how quality control will help, or, at worst, not hinder them in obtaining their particular goals.

2. Quality control begins logically with quality evaluation of the raw material. This should be correlated to the equipment which is to be used to process them. Also, proper planning before a single log is sawn applies to every phase of processing and stops only when the product is ready for use. There is no training program dealing with lumber quality control alone. Some effort is being made today to go back to the woods to forecast what should be able to be made from a given log source; but this type of effort has, to date, been on a special study basis, not as a continuing quality control effort.

3. More money for a given volume could be made by slowing down production and creating a product of higher value. It would also prolong the availability of fine old growth timber. Quality Control must be tied in with production control for maximum dollar recovery.

4. The flow of lumber in the mill is very important. Quality Control staff should develop a series of flow patterns which would permit the same end product to result. Also, co-operate with production control in shifting from one flow pattern to another when necessary to keep the production line balanced and operating smoothly. This enables operators to do their job more efficiently.

5. Quality Control - to be effective - must incorporate training, he must train each machine operator in what he should be doing and how to recognize when he is doing a good job. Sawmill training seminars are a start towards educating the operators.

Operators should know the problems of other machine operators, particularily those immediately before and beyond him. Then he can recognize the problems and smooth the flow if necessary.

6. Quality Control includes, for example, showing operators how much wane is permitted in each grade.

Drop sorter operators are key men in the flow pattern and must be better educated, so they can properly direct pieces that need remanufacturing to the correct machines.

7. A Quality Control man must know the principles behind how every piece of production machinery operates, in order to recognize the sources of mismanufacture which develop, i. e., wrong lengths, is it a result of poor trimming, bad log lengths at the mill saw or bad lengths

coming in from the woods? Log bucking is still a major loss area, both in the woods and in the mill. Headrigs are hard to assess for cost losses, but because this area is responsible for the performance of all other production equipment, time should be spent to analyze this operation closely. Sawing patterns should be recorded and studied in relation to the order file. The main job is to co-ordinate the headrig with the rest of the remanufacturing equipment.

NOTE: Sawyers should not slab clear logs heavily unless the mill is equipped with a horizontal band resaw. Much valuable clear is lost when heavy slabs are first sent to an edger.

8. All operators should be observed to determine if they are cutting to the mill order file and to see if needless waste occurs. Edgers should be equipped with shadow line guides or movable light lines to assist in maximum value recovery. Such procedures make for quicker decision by edgermen and are invaluable for assessing proper separation of grades. The control of what is fed to vertical and horizontal resaws is important and should be closely watched by Quality Control staff. Too much is directed to these machines that needs no further manufacture. Consequently, many pieces are resawn needlessly. The Quality Control staff should make the trimming area a prime concern. Many pieces are trimmed that do not require trimming. This can be a very heavy loss area without proper control. What is lost here cannot be retrieved except in chips.

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Every piece which arrives at the green chain should either go directly on order or to the planer mill for finishing. The continual accumulation of loads of lumber requiring remanufacture indicate problem areas.

A Proposed Lumber Quality Control Program

Objectives: The short term objectives of the program should be:

1. To correct mistakes in manufacturing, seasoning, grading, stamping, packaging, storage, handling and shipping of the lumber produced in the plant.

2. The long term considerations embrace a general standardization of grades and manufacturing procedure. This involves uniformity in sizes and lengths, maximum log utilization and lumber grade recovery.

Procedure: Continual observance of the finished product is essential. This can take two forms, close piece by piece inspection or concise overall evaluation of the material. From these inspections, mistakes in quality or milling procedure are observed and traced to their source. Often the type of mistake indicates the source. Other indications are, grades, graders chalk marks, lot numbers, type of manufacture, finished size and the lengths. It should be determined whether the actual problem lies at manufacturing point (planer, re-saw, etc.) or farther along the manufacturing line, i.e., pre-trimming, storage, seasoning or sawmill manufacture. Investigation may lead to the headsaw or to log buckling.

Grade Inspections: Periodic inspections on all grades should be carried out. The purpose is twofold: a check is maintained on the outgoing product, and an opportunity is afforded for practical grading instruction.

The graders, should be present whenever possible. Off grade

pieces should be discussed and the grades explained. When the grader is not present and a number of pieces are found off grade, such pieces will be set aside and discussed with the grader.

Size Inspections: A continual size checking program is essential. These checks should be made on lumber during the manufacturing process as well as on the finished product. Periodic measurements should be taken at all points, e.g., headsaw, edger, gang and re-saw. Lengths should be continually checked.

Shipping Inspections: Parcels of lumber readied for shipment should be given a concise inspection. Any gross irregularities in grade, trimming, lengths, bundling, strapping, stencilling, stamping, stripping and packaging should be reported to the responsible department. Notes should be made on all parcels not in nearly perfect condition, and filed for reference. These will be of value should complaints afterward arise concerning the grade or condition of these parcels.

Special or Occasional Duties:

1. Carry out special assignments such as field trips to know how other manufacturers operate.
2. Provide operating department supervisors with necessary information as to where and how they can improve quality and quantity output.
3. Consult with Sales Dept. on enquiries of materials suitable for special requirements not covered by standard grading rules.
4. Test new products for improving lumber quality and appearance, inks, chemicals, etc.
5. Check on quality and quantity of buy-ins.
6. Develop and recommend improvements in manufacturing for size and grade control.

Department Heads: All unsatisfactory quality conditions should be immediately reported to the foreman in charge. If necessary, matters should be referred to the Department Superintendent for action. In all cases the Superintendent should be advised of conditions and the actions taken or not taken by the foreman. Superintendents must be provided with any help and information that will improve quality and quantity. They should receive copies of all grade and size inspections. In the case of grade inspections these should be initialed by each grader and foreman and returned to the Quality Control files. Close co-operation with Superintendents is essential for a successful program.

Sales: On request of the Sales Department, service calls are to be made to customers who require information about or have lodged complaints against the company's lumber products. Such calls are to be kept to a minimum and only resorted to when grade interpretations are required. Complaint procedure forms will be received from Sales and kept on file.

Seasoning: Close collaboration with the dry kiln operator must be maintained at all times. Deviations from proper seasoning should be reported immediately to him. Moisture content readings should be made whenever conditions indicate their necessity.

Associations and Grade Stamping Agencies: Understanding and agreement on grades must exist between Quality Control and such agencies. The Chief Inspector of a grading association (or his representative) should be consulted for interpretation of the grading rules. Full co-operation will be given at all times to assist with Association grade inspections, educational classes and examinations. The Manager of a grade stamping agency (or his representative) is to be looked to for the discipline of his inspectors or graders.

Office Procedure: Time spent on office work is to be kept to a strict minimum. Quality reports are to be compiled, distributed and copies put on file. Files are to be kept of all pertinent information. Circulars and memoranda are to be sent to department heads and other interested parties. Copies of grading associations and grade stamping agencies reports are to be analyzed, interpreted and distributed. A brief journal is to be maintained. The Quality Control Supervisor reports directly to the Manager of Lumber Production. Copies of all reports and such other information of interest are to be given to the Manager with explanations where necessary. Meetings attended in the plant, visits to other plants, grading meetings, seminars, etc., will be attended at the descretion and direction of the Manager of Lumber Production.

Conclusions: An effective Quality Control Program is a great asset both to the lumber producing company and to the reputation of the lumber industry as a whole. In an age where competition is keen and consumer demands are increasingly critical, a better product is also a more profitable product.

Mill A
170MM BM Sawmill Production Study

Original Study	Re-Study
Log Bucking - Annual Loss $ 30,600.00	$11,790.00 (Equipment)
Headrig - Some Poor Sawing Practices	Improved (Training)
Edgers - Annual Loss $118,760.00	$63,720.00 (Training)
Trimmers - Annual Loss $142,800.00	$25,560.00 (Training & Equipt.)

Mill B
134MM BM Sawmill Production Study

Original Study	Re-Study
Log Bucking - Annual Loss $11,396.00	Nil
Edger - Annual Loss $18,304.00	$14,784 (Training & Equipt.)
Timberdeck - Annual Loss $11,555.00	$ 8,442.00 (Training)

Mill C
55MM BM Sawmill Production Study

Original Study	Re-Study
Log Bucking - Annual Loss $120,000.00	$30,000.00 (Equipment)
Headrig - Poor Sawing Practices	Improved (Training)
Edger - (Remodelling Mill)	Improved (Equipment)
Trims - Losses Prevalent	Improved (Training)
Resaw - Poor Practices	Improved (Training)
	NOTE: More Aware of Waste