

3. SAWMILLING.

Although the low prices of the depression period provided a strong incentive for cost reductions by improved sawmilling methods and resulted in the redesign of some plants and in the installation of new machinery, little real progress has been achieved. The relatively high degree of efficiency which is so apparent in the logging operations is far from paralleled in milling activities. This has been reflected more particularly in the rebuilding of mills recently destroyed by fire. Not infrequently the new mills are a copy-book pattern of the milling practices of fifty years ago, and in some cases do not include a single modern machine. The old single-sash breakdown, supplemented by a twin-saw breakdown, both with flat-topped carriages, the travelling bench, breast bench, and deal frame constitute all too often the alpha and omega of indigenous sawing practice, and are in such ill-balanced operation that both fixed and operating costs are excessive. While numerous factors combine to perpetuate the use of such equipment, ranging from capitalization difficulties to technical and operating problems, there is little doubt that considerable room for improvement exists, and under the shelter of a virtually prohibitive tariff and exchange barrier, the industry is under an obligation to reduce costs accordingly.

4. DRYING OF TIMBER.

The shortage of supplies of well-dried imported building-timbers has concentrated more attention than ever before in the history of the industry upon the problem of drying the indigenous timbers, more particularly as both producers and merchants have allowed their stocks to become depleted below a level at which the normal demand for dry timber could be met. While there is considerable room for improvement in air-drying practices both as regards the rate and quality of drying, great difficulty is experienced in effecting the desired reforms, and for this reason work has been concentrated upon kiln-drying as offering a better field for achieving immediate results. Every opportunity has therefore been taken during the year, not only of starting up and servicing new installations and instructing new operators, but of inspecting operations throughout the Dominion. These studies have demonstrated the prevalence of a number of weaknesses in operation and design which have resulted in poor kiln-drying and created much prejudice against the process.

Too often owners have been persuaded to adopt wide piling—a practice which the State Forest Service has condemned over a long period of years. An actual investigation of the influence of this factor shows that a high degree of uniformity in drying is almost impossible in the case of stacks 8 ft. and more in width, the variations in final moisture content amounting to as much as 20 per cent. Cross-shaft kilns also have been found to give non-uniformity of drying owing to the development of end-wise drift unless corrected by opposing fans as in the simpler longitudinal-shaft kiln. The preparation and placement of kiln samples a day or more prior to the charging of the pile into the kiln have resulted likewise in serious repercussions. These samples, by virtue of being placed on the edge of the piles, have been subjected to relatively rapid air-drying before charging into the kiln, with the result that when the kiln-drying is stopped because the control samples have reached the desired moisture content, the whole charge is anything from 20 per cent to 30 per cent. above the moisture content indicated by the samples. Such timber when delivered to consumers has been used with disastrous results, and, where block-stacked for future use, has been irretrievably damaged by stain, &c. Equally disastrous results have followed the drying of mixed species, qualities, and thicknesses. Excessive steaming also has darkened the timber and left sticker marks sufficiently prominent to depreciate the value of the finished product. The basic cause of this defect is the failure of operators to realize that steaming must be limited to the absolute minimum consistent with relieving any internal stresses which may have been developed in the timber due to rapid drying. Generally speaking, intermittent steaming of New Zealand softwoods is not ordinarily required during the run which, if controlled in accordance with State Forest Service recommendations, should not necessitate even at its conclusion a longer steaming-period than four hours per inch of thickness.

The greatest practical improvement in kiln-drying effected by the State Forest Service during the year was the application of the dual dry-bulb recorded controller to facilitate circulation reversals without damage to the timber, and it is anticipated that this instrument will become standard equipment almost immediately. A publication embodying the results of these studies is now in course of preparation, and copies will be circulated for the information of operators as soon as available.

Generally speaking, it is advisable where servicing and training work by the State Forest Service is required that intending owners should first submit their proposals for the erection of kilns.