

As a general statement, I believe it would be correct to say that New Zealand has ample resources of raw material in its exotic forests to permit of large-scale expansion, and which, if not harvested, will result in tremendous economic loss.

Quality is poor, and below that of competitive countries.

Cost of raw material is relatively low, and cost of labour relatively high.

In any expanding industry it can be assumed that efficiency of labour will be lowered by the introduction of a greater percentage of unskilled labour.

The expansion of production beyond domestic requirements is dependent upon being able to market in Australia in competition with other countries, and such competition will necessitate the lowest possible selling-prices for bulk sales.

Under to-day's conditions, cost of equipment, installation and building is unreasonably high, involving considerable outlay.

Taxation absorbs up to 11s. 5-6d. in £1, requiring a margin of—

- 1s. 11-4d. on a production of 6,000,000 to return 5 per cent. on shareholders' capital of £50,000.
- 3s. 10-8d. on a production of 6,000,000 to return 5 per cent. on shareholders' capital of £100,000.

If the foregoing assumptions are correct, then I believe that, within reasonable limits, expanded production at minimum cost is more important than maximum utilization; that maximum mechanization is required with a minimum of skilled labour; and that capital outlay is required to be kept as low as possible.

My observations convince me—

- (1) That where a sufficiency of milling life is available, the use of log gang saws in small-diameter timber is, without question, the most economic, from the point of view of utilization and labour cost.
- (2) When operated in conjunction with chipping for pulp, resawing and planing factories, box-factories, and remanufacturing plants generally, the use of circular log-edgers, with following resaws, is fully justified at considerably less capital expenditure if a market in Australia can be developed for flitches 4×2 , $5 \times 2\frac{1}{2}$, 6×3 , $7 \times 3\frac{1}{2}$, 8×4 , 9×3 , 10×3 , 12×4 . This type of installation is well worthy of consideration.
- (3) In small operations the use of circular log-edgers of approved design, flat-top bench with fence, or light Pacific bench, followed by circular resaw with dial setting, and vertical feed rolls worked on the round-and-round principle, and the use of light-gauge tapered saws, is a fully efficient and economic operation.
- (4) In conjunction with any log gang installation, I am of the opinion that it is advisable to provide a small circular unit to deal with rough and ill-shapen logs. These remarks equally apply to circular log-edger units.

In my opinion, the fast headrig type of operation, gunshot feed and double cutting band, is not suitable to New Zealand conditions in small-diameter logs.

Based on these conclusions, it is necessary to examine the merits and demerits of the Canadian system of through-and-through sawing with a single gang, followed by multiple-saw edgers, and logs unassorted as to size, as against the Scandinavian system of cant sawing on the log gang, followed by a cant frame and logs closely sorted to 1 in. and $\frac{1}{2}$ in.-diameter log classes.