

FUTURE CONSIDERATIONS

Looking ahead to the end of a forest rotation is like gazing into the crystal ball. Accurate forecasting of economic conditions, of utilisation standards, and of extraction methods are all difficult. It is probably impossible to look into the economic future, but we can get some idea of the general trends in utilisation standards and extraction methods.

Utilisation standards will continue to improve, particularly with the development of new forest industries. The timber industry will become a true forest products industry, as is happening in North America. As new uses are found for sawmill waste, small pieces, bark, and possibly even branches and needles, we will tend to take increasing proportions of the whole tree from the forests. This development may mean that smaller units could economically be worked. However it is believed that any trend in this direction will be offset by the tendency for logging equipment to become bigger and more expensive. This will mean that to pay its way the machinery must be kept at high production every possible working hour. It will therefore need to operate in large areas. As an example, one logging method at present being used in Kaiangaroa forest is producing 12,000 cu. ft. or more per day, involving the clear-felling of nearly 2 acres of forest per day. Even a 90-acre compartment worked that this rate would be finished in about six weeks, a short period between time-consuming and costly shifts.

During the next rotation it is considered that logging machinery will be bigger, have greater efficiency, and produce more, but fixed costs will be higher. A Le Tourneau now costs about £19,000, a Skagit £12,000, a D.8 £9,000.

Regardless of any improvement in the efficiency of machinery, it is considered that most extraction methods will be limited by the same factors as apply today, the most important being topography.* For more than any other reason, this makes it essential that topography should guide layout, and that the logger's viewpoint should be fully considered when planning a new forest.

DISCUSSION

MR ALLSOP, referring to the formation of compartments in managed forests, said he accepted Mr Thomson's views as to the desirable features, but in his opinion good, well-defined boundaries were more important than any other requirement.

MR McKEE said that the Forest Service is now beginning to use staggered settings of about 80 acres. The amount of timber lying under the skyline was important, since about ten per cent of a working day was taken up in moving rigging. From a logging point of view,

* Note. The possible future employment of helicopters on log extraction work would mean a considerable deviation from present day practice.

tree quality and yield per acre were today more important than the size of the area to be felled. Thinning operations posed more of a problem than final fellings. His final thought was that if foresters could grow good stands that were well sited, then it could be left to the loggers to extract the timber.

MR CHAVASSE agreed with Mr McKee. He pointed out that compartments were also necessary in natural forests. A feature of these forests, especially in Westland, was their mosaic pattern. Some subdivision into compartments had already been done by nature, and man would be well advised to follow it.

MR HOCKING made a plea for compartments smaller than 10 or 15 acres when special circumstances warranted it, e.g. where a moist valley bottom with rich soil was suitable for planting to poplars or other hardwoods. Even very small areas of high quality sites should be put to their best use.

Mr RAWSON thought that the discussion was approaching the subject from a wrong angle. Logging was changing from year to year, as new equipment and new methods were developed. All the forester could do, he thought, was to delineate compartments according to their natural features; subcompartments of different species would occur, notwithstanding.

MR HUTCHINSON said he wanted to comment on Mr Thomson's contention that a forest of small-sized compartments was a "far safer forest". He suggested that there should be a sense of proportion in the breaking up of a forest area. A patchwork quilt, he thought, was grossly overdoing it. On Northern Hemisphere experience with forest insect and disease outbreaks, it seemed that any breaking up of species blocks that we could do in a small country like New Zealand would be of little importance. Here, fire and especially wind were the most important factors to be considered. Since the amount of windfall was proportional to the length of a stand margin, the breaking up of a forest too much meant that it became very vulnerable to wind. Also, while old stands of *Pinus radiata* were relatively fireproof, in many other species the inflammable stage was much more prolonged. The essence of compartment subdivision, he thought, was siting, and not protection, on which too much stress could be laid.

MR THOMSON said he was in agreement with Mr Hocking over the formation of smaller compartments in special circumstances, but he thought that the differences in site would have to be substantial to justify anything under the 10 to 15 acres suggested. When site differences are extreme, then it is desirable to plant areas even as small as one or two acres with a different and more suitable species. He did not agree to Mr Rawson's reference to such minor areas as sub-compartments.

MR CONWAY thought that the matter boiled down to an acceptance of Mr Allsop's view that it was essential to have good definition of the compartment on the ground. He felt that the best summary was, "one site; one species; one treatment".

MR BLITHE said it seemed that soil and site factors, physical features, and logging methods were all being tied together. He could not see how all these things could be given equal weight, and he supported Mr Allsop in maintaining that physical features were the most important consideration in establishing compartment boundaries.

The discussion was perhaps best summed up by MR KENNEDY who was overheard to say "Grow the highest quality timber you can and the loggers will beat a path to your door".