



# Genesis of Commercial Division, NZ Forest Service

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## Preamble

How can one who has not served in the Commercial Division present an appreciation of its achievements? The writer, who joined the Forest Service in 1926, became associated in 1928 with A.R. Entrican and W.C. Ward in the Forest Products Branch and stayed there until retirement in 1968. It was, of course, Entrican who brought the Commercial Division into being and Ward who was its first Manager. In this short paper the names of, and contributions made by, a succession of people in the Division cannot be covered adequately, but I can testify to their achievements in a virtually unsung revolution in wood processing and use in a country notable for its high per capita wood use.

When Waipa Mill began production I operated the batch of drying kilns to help in developing schedules for stock sizes of radiata pine, but in contrast with other commercial plants, provision had been made for a small kiln with a remarkable potential for sophisticated research. This unit was matched elsewhere in the mill by other facilities provided specifically for developmental work. The latter function is an essential complement to laboratory research. The broad function of the Division's commercial timber processing units, when they began operation, was recognized essentially as practical demonstrations of how to use a new untried resource. The much larger resource of lower quality wood from the depression plantings had already been foreseen by Entrican and one or two individuals in the private sector, as requiring more highly capitalized units combining pulping and milling — but it was still some distance away in time.

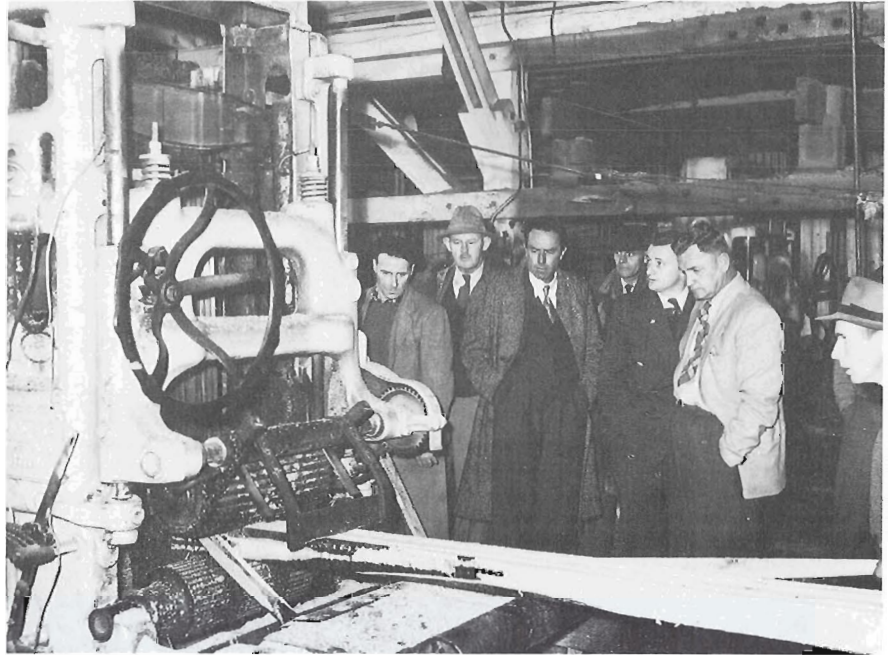
## Pre-radiata phase

An inventory of indigenous forest resources in the early years of the Forest Service had revealed the prospect of a future wood famine and emphasized the inadequacy of plantings of introduced species. This led to the enormous plantings of conifers in the depression, with the preference given to radiata pine.

While the indigenous forest inventory

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A demonstration of the cutting of tawa and matai at Waipa Sawmill in July 1954.

was proceeding, the Forest Products branch headed by Entrican was seeking more economical use of the timbers, whose high moisture content as well as over-large logs caused trouble in logging and sawmilling. It would be fair to say that the timber industry was encumbered by technically difficult logging country — by having to put sturdiness in mill construction ahead of cutting accuracy — by short life of operations in most locations — by inadequate boiler capacity and by low standards in staff housing. Co-operative studies with the timber industry and with wood-users led to better drying practice and to introducing timber grading and a timber building code providing for more timbers being accepted, with some reduction in timber sizes. User confidence in turn was gained from co-operative studies, using universally-accepted procedures for strength testing, at Auckland and Canterbury Universities. Such testing was extended to introduced conifers which had reached commercial log size. Thinnings from planted forests were demonstrated to be treatable with standard creosote available from local sources, and to be suitable as a replacement for scarce indigenous fencing and light poles; they were being marketed

several years ahead of the Commercial Division's mill operations.

## The radiata phase

The act of faith which led to increased plantings of radiata pine in the mid-1920s, underlay the acceptance by the Service, and eventually by Government, of a need to build up knowledge of how best to introduce radiata pine timber to the market before severe shortages of native species occurred. There was limited use of farmbelt radiata wood soon after World War I which showed that selected timber performed satisfactorily in houses. But to the public generally it was a container and concrete boxing wood, sometimes called "cabbage tree" or "rhubarb"!

In 1940 Waipa Mill came into being in an atmosphere hinting only mildly of the revolution to come. Objectives in setting up the Commercial Division mills and associated enterprises are enumerated below; they contrast markedly with features already mentioned as affecting the native timber industry.

1. Operation of efficient profitable units designed to deal with specific introduced conifers available for utilization at that time. At both sawmills, Waipa and Conical Hill, initial emphasis was upon radiata pine.

Scandinavian log gang frame saws which were used for accurate sawing with low waste of the small, slow-grown European pine logs and also chosen for sawing radiata pine a few years earlier in South Australia, were soon found to be less suitable in the New Zealand circumstances. The faster growth, wider range of log diameters with many of large size, along with large "spot"-type defects as well as the defective core, were features that called for changes in sawing procedure when timber grading for diverse end-uses became an established practice later.

2. Secondly, they were designed to draw on **wood supplies in perpetuity** from the forests in which they were located. This concept was largely unfamiliar in New Zealand and implied a wish to raise the status of sawmilling from one of crudeness and short life to one of permanence and sophistication.
3. To use the permanent sawmill and ancillary buildings to **demonstrate good structural design in timber**, e.g. in long-span roof trusses and splitting connectors in joints.
4. To provide modern houses, village amenities and hostel accommodation for key personnel as a logical adjunct to a permanent mill. Such buildings were used also to demonstrate **potential suitability** of the mills' products to **replace indigenous timbers**.
5. To minimize man-handling of logs and timber, along with continuous flow through edging, docking and recovery sections, antisapstain dipping, accurate marking for grade on a (roofed) sorting chain, to final



A Forest Service exhibition of material available to the farmer, including the laminated truss barn, at a Farmers' Day at Ruakura Animal Research Station in June 1961.

manual pull-off into block stack segregating sizes and grades. Mechanical handling by straddle and fork-lift trucks continued the flow pattern to filleting for air or kiln-drying and subsequent processing.

Insofar as those several objectives related to accepted uses for radiata pine for containers, concrete formwork and other utility functions, most of the objectives were achieved at Waipa and Conical Hill mills by the time World War II began to have its full impact. The attractively-presented timber and manufactured products were soon diverted to war needs. Objective 2 by which timber production at Waipa was to be matched to Whakarewarewa Forests' managed yield was an early war casualty as mill production had to be doubled. Other war casualties were all indigenous timber stocks and easily accessible forest stands. It was the dearth of building timber for post-war housing that triggered

off the revolution by which radiata pine took on its new role. For such a basic wood-use as building, one normally expects acceptance of a new timber, especially a despised one like radiata, to be a slow and painful process taking decades rather than years. During the war radiata pine was used for staff housing and other mill buildings, and a few trial lots in building sizes had gone from Waipa to several building firms. However, acceptance by building supervisory authorities of radiata pine in framing sizes as used for rimu, required evidence of comparable strength, stiffness and other aspects of performance. One primary condition for general acceptance of radiata pine framing had to be that the grading rules should embody simple visual limitations on all defects that reduce strength. Their practicability, moreover, rested upon the rejection level for timber sawn to framing sizes being relatively low. Waipa mill became the venue for the sawing trials by which framing grades conforming to draft rules were produced before submission to a NZ Standards committee representing producer, user, supervisory and lending interests. Acceptance of the framing grades involved practical trials as well as discussion and the stage was set for further Waipa involvement when residential courses were started at the Forestry Training Centre in practical grading and related technology; the mill provided timber lots and facilities. Each course had equal representation from producers and users, and the goodwill built up through their mingling may well have been partly responsible for the rapid entry of building grades of radiata pine into house building and general construction.

The developmental role of the Commercial Division mills illustrates how they differed from most commercial mills. After graded radiata pine became the principal timber for a comprehensive range of uses, developmental and research work by the Division was reduced, but certainly not abandoned.

## PLAN NOW TO ATTEND

### 1988 NZIF Annual Conference

May 11-15 at T.H.C. Chateau Hotel,  
Tongariro National Park

## THEME — 'NATIONAL LANDS — MECHANISMS OF MANAGEMENT'

As a result of the recent government changes

- What is now expected of the new organizations?
- What steps have been implemented?

Programme includes panel discussions, question times, field trips, golf, conference dinner and other social activities. It will also be a family event — so tell the family to keep these dates free.

*Remember 1987-88 is the National Parks Centennial Year.*