

CHAPTER VII.—FOREST ENGINEERING

53. *General*.—Existing roads, bridges, and buildings, and engineering services in general, have been maintained at a reasonable standard. Although equipment is now more readily available, shortage of suitable labour is still a difficulty.

54. *Roads and Bridges*.—Developmental work in both exotic and indigenous forest has continued, necessitating the construction of many new roads and bridges. Work under this heading includes : new roads formed, 37 miles 65 chains ; roads maintained, 865 miles ; new tracks formed, 10 miles, 58 chains ; new culverts, 71 ; culverts repaired, 23 ; new bridges, 7 ; and bridges repaired, 34. In addition, drainage works and road construction in Berwick State Forest are being undertaken by the Public Works Department. Airstrips for the use of light aircraft of the aerial patrol have been constructed, one at Kaingaroa Forest and one at Rotoehu Forest.

55. *Construction Equipment*.—Second-hand plant has been acquired from the Armed Forces and from United States surplus equipment as it has become available and has been put into service after reconditioning. While the selection is limited and the life of such plant must necessarily be short, the needs of the Service are being met for the time being. The additional plant has also made possible a higher standard of maintenance of all units.

56. *Buildings*.—The problem of accommodation both for married and for single employees remains acute. It has been possible to relieve it in some instances by grouping several huts for married quarters, and by the utilization of defence huts for camp accommodation for single men. In Southland a number of houses and other buildings originally erected for the Linen Flax Section of the Department of Industries and Commerce have been taken over by the Forest Service. Included in these is the hostel of thirty-eight rooms at Tapanui, which is now the South Island Vocational Training School. The requirements of the main departmental training centre at Rotorua have been met temporarily by the conversion of old buildings at the former Whakarewarewa Forest headquarters.

Apart from camp construction, which includes dining-rooms, kitchens, and ablution rooms, the building work included :—2 fire lookout cabins completed and 1 nearing completion ; 1 100 ft. fire-lookout tower ; 1 school ; 1 pumphouse ; 1 tractor-shed ; 1 aircraft hangar (for Air Department) ; 5 major house alterations and renovations ; and 3 house removals. In addition, contracts have been let by the Housing Division of the Public Works Department for 36 houses in various State forests.

57. *Water-supply and Drainage*.—New wells have been drilled at Balmoral and Kaingaroa to augment existing water-supplies, and additional permanent storage has been provided in Conical Hill and Dusky Forests by building five small dams. A limited amount of storage has been completed at Kaingaroa Forest by the erection of concrete tanks at three strategic locations, and additional tanks will be provided as supplies of cement become available. On account of the dry summer, it was found necessary to cart considerable quantities of water at Rotoehu to houses not connected to the main supply, but these houses, which are now widely separated, will eventually be moved to form one compact settlement.

58. *Utilization Plant*.—The production capacity of the Waipa Sawmill was increased during the year by the installation of another high-speed log-frame, making a total of four frames now in operation. Only a relatively small building extension was required for this purpose. The circular rig, which since December has concentrated on cutting scantling for building purposes, was also improved to enable it to cut larger logs, and heavier mechanism was installed to deal with the larger quantities of waste produced. With the increased log throughput it proved impossible to burn all waste under the boilers, and in consequence some had to be dumped. At the same time, steam demands for kiln and power requirements could not be fully met, but additional boilers purchased for this purpose will, when installed, overcome this difficulty. They will also obviate the need for forcing the existing boilers to their full capacity, which this year has