

Programme expenditure amounted to £31,765 (£32,660). Commercial stations also made use of talent and recorded features supplied by advertisers at no cost to the Service. General administrative and running expenses (including provision for depreciation) amounted to £193,536 (£181,454), net profit being £29,470 (£95,626). After providing a reserve of £17,300 to meet taxation on the year's profits, the accumulated balance of Appropriation Account as at 31st March, 1948, stands at £179,349.

## ENGINEERING SECTION

### DEVELOPMENT

The plans approved in 1946-47 for the establishment of new stations and the increase in power of many of the existing transmitters are being proceeded with. The necessary steps have been taken to order the technical equipment, arrange studio accommodation, and acquire land and buildings for the transmitters.

*Transmitters.*—Of the orders placed for the transmitters, six of the 2 kW. transmitters are now in New Zealand, The manufacture of 60 kW., 10 kW., and other 2 kW. transmitters is proceeding in Sydney.

Larger transmitters are to be installed in the transmitting buildings at Henderson, Titahi Bay, Gebbies Pass, and Highcliff. To accommodate the additional aerial systems required for use with these transmitters it has been necessary to purchase further land at these locations. For the Bay of Plenty and West Coast (South Island) transmitters, sites have been obtained at Paengaroa and Kumara Junction respectively.

In the case of the smaller stations a departure is being made from the practice of installing the transmitters in the cities and in the same building as the studios. Under these conditions it is difficult and often impossible to erect an aerial radiating structure which performs efficiently according to modern standards. For this reason it has been decided to locate these transmitters some two miles or so from the cities, in a position where it is possible to select an area of land suitable for the 175 ft. mast radiator and adequate earth-screen. The removal of the transmitters from the city areas in this way will also make it easier for listeners in these areas to receive distant stations.

In order to economize in technical staff these small transmitters will be controlled remotely from the studios and will operate unattended.

*Aerial Radiating Systems.*—At the four principal transmitting-stations arrangements have been made to improve the efficiency of the present radiating systems by the extension of the ground screens to conform with the best practice.

As additional transmitters are being installed at these stations it is necessary to provide further aerial radiators, and these will comprise a 500 ft. mast at Henderson and 400 ft. masts at Titahi Bay, Gebbies Pass, and Highcliff. These masts will be sectionalized and electrically loaded. This enables a smaller mast to be used than would otherwise be necessary, resulting in a considerable saving in cost.

Owing to the shortage of steel in Australia, the manufacture of these masts has been delayed, and it is likely that some of them may not be in operation until the end of 1949. Arrangements will be made, however, to use temporary aerial systems in the meantime, but these will not be such efficient radiators and will not provide such good coverage as will be obtained with the final masts.

As a further economy measure it is intended to operate two transmitters simultaneously from each mast system. To enable this to be carried out satisfactorily it is necessary to change the frequencies of some of the stations.