

# NEW TRENDS IN N.Z. BROADCASTING

## Developing Radio as a District Institution

THE New Zealand Broadcasting Service has now started on its plan, delayed by the war, to give the Dominion better radio coverage. The aim is to provide clearer reception in areas where it is not now at its best, and to establish subsidiary local-coverage stations in cities and some of the larger towns. Overseas labour troubles and the shortage of building materials will mean slow progress, and so it is impossible to give a date by which the whole scheme will be complete.

Up to now broadcasting in this country has been treated from the national viewpoint—giving the best programmes available without much regard to the locality of performers or stations. The new idea is that radio should be used more as a local institution, for developing cultural life, artistic endeavour and civic consciousness in towns and districts. The development scheme provides for a chain of low-powered local stations throughout New Zealand outside the main centres. These will depend for their appeal on local interest in the performers and their work, and on the local significance of talks and relayed ceremonies. Local talent drawn on for broadcasts over these stations need not be of as high a standard as is expected from the more powerful stations, so that a wider range of artists may have a chance to be heard.

Talent of sufficiently high grade discovered by these local stations will be broadcast by the more powerful district stations, and the best district talent will be used on a national level. The highest grade of national talent will be called on for touring, festivals, and stage presentations. This will provide a means of grading talent from that acceptable only for local stations, up to that selected for touring, each stage being a stimulus to the performers in the grade below.

### New Equipment

To give better reception of Wellington stations the NZBS has ordered from Amalgamated Wireless, Australia, a 10 k.w. transmitter for Station 2ZB, and a new 60 k.w. transmitter. The latter will replace the old plant which has come nearly to the end of its useful life at 2YA. These stations can all economically use the one site at Titahi Bay. The present 710ft. mast will be modified to act as a radiator for 2YA and 2YC, and another 400ft. mast will be built at Titahi Bay for 2ZB and 2YD. The masts which are a well-known mark on the skyline at Mount Victoria will remain, to be used at some future time—for instance, if television becomes practicable in New Zealand. Under the new technical set-up, the masts themselves will become radiators, doing away with the present suspended copper wires, and this principle will be used at all stations.

Auckland's installation will be the next largest. There will be three 10 k.w. transmitters—one to replace that at 1YA and the other two for 1ZB and 1YX. The existing 500ft. mast will be used for the output of 1YA and 1YX, and a new mast will jointly serve 1ZB and 1ZM. The Auckland scheme means removing 1YX from its place at the top of the Shortland Street studio building. The increased power will give a stronger

signal in the congested areas of the city, and over-ride power noises which are now troublesome to listeners.

In Christchurch, both 3YA and 3ZB will have new 10 k.w. transmitters. The old one at 3YA will be used by 3YL as long as it is serviceable. When completed the three transmitters will operate from Gebbie's Pass, where a new 400ft. mast will act as joint radiator for two of the stations.

Dunedin's 4YA will work from a new 10 k.w. plant and another of the same power is on order for 4ZB. Station 4YA's existing plant will go to 4YO. Broadcasts from 4YA and 4YO will be from the 500ft. mast at Highcliff; 4ZB is to have a new 400ft. mast of its own. The other 10 k.w. station in the South Island will be at Kumara, on the West Coast, four miles south of Greymouth, to give West Coast listeners better service. Timber from a military camp will be adapted for the temporary buildings to house equipment and staff. Station 3ZR will have a 500ft. mast.

### Bay of Plenty Station

A 10 k.w. transmitting station is to be established at Paengaroa, to serve the Bay of Plenty district. The site will be on the junction of the roads leading from Tauranga and Whakatane to Rotorua. This was chosen with the object of covering the Rotorua, Tauranga, Whakatane and Opotiki areas. The NZBS has a permanent site at Rotorua, opposite the council chambers, and buildings at Mangere, purchased from the War Assets Realisation Board, and sent to Rotorua,

will be adapted for a temporary studio. In time there will be permanent studios in this district, one at Tauranga and the other at Rotorua. Each will have its own programme staff.

There is a big expansion programme ahead for 2 k.w. stations. One will be erected at Whangarei, with a 200ft. mast, and here again war-time buildings will be used for temporary studios. Inquiries are now being made in Gisborne for premises where a 2 k.w. transmitter can be installed, with a 200ft. mast. A site has already been selected for Hamilton's station and officers of the NZBS are now looking for a suitable locality for New Plymouth's 2 k.w. plant.

It has been hard to find satisfactory temporary premises at Wanganui, but another 2 k.w. transmitter has been ordered for installation when a building is available. The low-powered commercial station, 2ZA Palmerston North, will be increased to a 2 k.w., and permanent sites for studio and transmitter have been selected. In the meantime the present studio will be used. Neison's 2YN is another low-powered station which will be stepped up to 2 k.w. strength; another temporary building is being adapted for studio purposes and to take an increased staff.

Timaru is now to have its own station, with the temporary studio in the town. The 2 k.w. transmitter will be near Washdyke.

The increase in power of the various stations mentioned will mean improved reception in many districts.

## A MATTER OF HEIGHT

THERE may be among *Listener* readers some who will want to know why the masts for transmitting different stations' radio programmes differ in height. And they may wonder why, in some cases, aerial wires are now dispensed with, leaving the mast itself to act as the radiator. The *Listener* asked an NZBS engineer to explain these things—as far as possible in non-technical terms.

Masts, he said, differ in height according to the varying wavelengths used for transmission. The longer the wavelength, the longer is the mast required—710ft. in the case of 2YA's mast at Titahi Bay. Smaller stations have shorter wavelengths and therefore shorter masts; some of these are as low as 200ft. But the wavelength is not related to the power of a broadcasting station, although it is a vital factor in coverage. The longer wavelength is used wherever possible for the more important stations because the coverage obtained is greater, with a minimum of fading and distortion.

### The Fading Ring

There is a certain distance from every broadcasting station where the maximum degree of fading and distortion occurs; this is known technically as the fading "ring," and it is further away from the station when a longer wavelength is used. Through gradual development in broadcasting methods, the engineers have found that masts of certain heights

are more effective than others in pushing the fading ring as far away from a station as possible.

They have discovered that masts whose height is half the wavelength are the most economical. For further economy the masts of to-day are built in sections, one section being insulated from another and inductance loading (or a tuning coil) inserted between the sections. This arrangement gives the effect of increased height without the cost of building very high masts.

The use of the suspended copper wires in the past was part of an attempt to obtain the equivalent of a high aerial mast. At Titahi Bay there is a semi-umbrella type of aerial which has been effective, but the sectionalised mast is even more useful.

The engineer explained that half the wavelength of 2YA in an unsectionalised mast would require a height of 1,000ft. The whole idea of doing away with the suspended wires and using the masts themselves as radiators has been to achieve the most effective height most economically.

More than one station can broadcast a programme from the one mast aerial. Introduced between the two transmitters is a tuning unit containing components which cause the aerial to radiate, simultaneously, the frequencies of the two or more transmitters. In effect, the tuning unit separates the frequencies from the transmitters and allows the aerial to radiate them independently.

THE BIG (710ft.) mast at Titahi Bay, which is to be modified to act as a radiator for 2YA and 2YC. A new 60-kilowatt transmitter for 2YA is on order