

go. "Check, please," and I repeated the result—"Right." "Number 47, Wellington Suburbs," and I was well on with the next result. The slips of my pad were quickly filled, and immediately one result was down the paper was whisked away to the editor's office, where two inoffensive looking microphones were reposing on the table. At first the results went straight to the announcer, but soon there was an accumulation, and they went through a clerk, who grouped, checked, made the writing more legible, and passed the slip to the announcer.

Then No. 2 line was brought into operation, and the Auckland results commenced to come over. Each sheet was hurried away upon completion and checked with the others so that there would be no duplication and so that only the latest results should be broadcast.

All this time the results were being recorded, and from time to time a summary was prepared. This was another job. Occasionally short descriptions of the scene in the city's main streets were broadcast—but the announcer could see nothing of this. Another member of the staff was news hunting—mingling with the crowd, slipping from group to group, noting what was happening and how the results were being received. Back in the office short reviews were written and sent through to the announcer.

Everyone was hurrying, everyone helping. And so the results came through.

#### The Private Stations.

**S**PLENDID service was given not only by all the YA stations but also by several private stations, to whom very many receivers were tuned. Too much praise cannot be accorded the Wellington station 2ZW, whose announcer was, to use a colloquialism, "the life and soul of the party." His remarks to the crowd were highly entertaining, and at times not a little ironical. Still, the crowd appreciated his humour, although oftentimes it was directed against them. The microphone of this station was placed on the balcony of the "Evening Post," in conjunction with which 2ZW worked.

In Christchurch an amusing incident occurred. The crowd, more than slightly antagonistic to some of the speakers, hurled missiles at the radio gear, and actually succeeded in putting it out of action. Not to be outdone, 3YA went over and relayed 2YA until the apparatus was made to function again.

The loud-speaker operated, with only occasional stoppages, for the rest of the evening, being at its best, perhaps, just a minute or two before midnight, when it appealed, in anguish: "Hey! You down there with the eggs! Keep them to yourselves."

#### How the News Reached the Crowds.

**I**N Wellington three reproducing systems were employed. At "The Dominion" was installed a Standard Telephones and Cables outfit, at the "Post" there was a Philips installation, while at Nimmo's buildings Amalgamated Wireless had erected two

**T**HANKS first of all to the outstanding efficiency of the Electoral Department in establishing a record for the speed with which the result of the poll was known, and in the second place to the effective co-operation established between the Electoral Department, the newspapers, and the radio broadcasting stations, listeners were given on Wednesday evening a markedly intimate contact with the fortunes of the General Election. From shortly after 7 o'clock, when the first results came to hand, till 11.30, when 2YA was able to close down with a final summary of the position, listeners were kept fully informed of the progress of affairs.

The closest co-operation was established between the Electoral Department, the Post and Telegraph Department, newspapers in various centres, and the main broadcasting stations. As a result the whole machine worked effectively, and listeners secured the benefit.

In Auckland 1YA worked in conjunction with the "N.Z. Herald." In Wellington 2YA co-operated with "The Dominion" newspaper, and used the offices of the "Radio Record" in "The Dominion" building as its temporary studio. In Christchurch 3YA co-operated with the Christchurch "Times," and in Dunedin 4YA worked with the Dunedin "Evening Star."

Wellington, as the Capital City, was the clearing-house for information for country electorates, and consequently the outside stations established listening-posts upon 2YA, thus securing an advantage over telegraphic information to their centres. The whole of the arrangements worked most smoothly, and as a result listeners had the full story of the elections in their possession well before midnight.

Opportunity was taken by 2YA to broadcast the Prime Minister and Mr. H. E. Holland, the Leader of the Opposition. The reception given to the Prime Minister by a crowd with marked Labour leanings outside "The Dominion" building was somewhat comparable to that accorded the Right Hon. J. G. Coates three years ago when it was practically impossible for him to be heard. On this occasion Mr. Forbes, in spite of the fact that his voice was completely drowned to all in the audience confronting him, maintained his observations, and, by addressing the microphone, reached the far wider audience represented by listeners throughout the Dominion. Possibly it was the consciousness that by so doing Mr. Forbes was defeating them that stirred the rancour of the unthinking crowd to a sustained boo-ing.

The Radio Broadcasting Company has received many communications from listeners speaking in the highest terms of the complete arrangements which the company made for distributing of election results.

gamated Wireless had erected two speakers.

Although all serving the same purpose these outfits differed widely.

The Standard Telephones installation was perhaps the largest, for it employed six huge speakers and had sufficient reserve of power to cover the largest crowd Wellington, or, for that matter, any New Zealand city could muster. Needless to say only a portion of this power could be used on election night. The speakers were perhaps the most interesting, for they were the regular "talkie" affairs that everybody has heard but only a few have seen. These gigantic speakers are capable of handling tremendous volume and have marked directional properties, apropos of which it is interesting to observe that about some fifty yards away there was a muffled area, while a few yards farther on reception was perfectly clear and remained so for some considerable distance.

Other speakers used in this outfit were horn shaped and stood six feet high. Although horn shaped, these speakers, and for that matter the talkie speakers, are really a class of dynamic employing a field magnet energised by a six-volt accumulator.

The amplifier was arranged on a

panel about five feet in height and the valves were held out on the front like lamps. There were eight of these, two being rectifiers. The first were screen grid 224's, the next 227's, and the last 50 watters, all three stages being in push-pull. This tremendous output was fed via a special matching device into the voice coils of the speakers, which were arranged so that the load was evenly distributed. It is of interest to note here that similar installations have been used for many momentous occasions—the Australian elections, the tennis championships at Wimbledon, Anzac Day services in England and elsewhere in the Empire, with the Prince of Wales on his tour through South Africa, Eucharistic conferences as far back as 1924, the Wembley Exhibition, the Schneider Cup contests, the Olympic Games, and other important events.

The Philips equipment comprised an amplifying panel of standard design and two heavy dynamic cone speakers. These are more like the ones we are familiar with, except that they are much heavier and are encased in a weighty cup-shaped device that acts as a baffle. This is of interest in that it is heavily padded on the inside and fastened to the cone so that there can be no mingling of the sound waves from front and rear of the cone. This is rather different from our usual conception of speakers where the backs are left open.

The amplifying panel contains many features of interest. It resembles a medium-sized packing case and is totally enclosed except for the controls on the front. To make any adjustment to the set itself one must open the back, and in doing so the power is cut off.

There are four compartments or "stages," although three is the maximum that can be used at once. They are in two identical pairs. The first two comprise two ordinary amplifying valves, impedance coupled just as in any set (they happen to be E415 and B405) and these are connected into the power stage, a single 50-watt valve. The switches are arranged so that either one of the first stages can be used with either of the second, or, if necessary, with both the latter, in order to get greater undistorted output.

Thus the outfit is safeguarded at all times against breakdown. A failure in any one stage means only the rotation of a switch and its counterpart is in action. On opening the back one sees that a complete range of spare valves and fuses is carried so that in case of breakdown the amplifier can be in perfect working order again in a few moments.

During the election, the outfit was connected with 2ZW by a specially matched line.

#### High Efficiency Speakers.

**T**HE A.W.A. outfit, though it adequately held its own in the matter of both volume and tone, was a much less ambitious installation than either of the two others. The amplifying device was no more than a single 226, feeding into a pair of 223's in push-pull, which, in turn, supplied two 250's. The whole outfit nestled in a small portable case. The secret of the high efficiency lay in the speakers. Though barely five feet high and eighteen inches across the mouth, these remarkable reproducers made up for the deficiency in power output. Their clarity and penetrating power have been the subject of much favourable comment, not only here, but in all parts of the world, for this speaker is well-known. Entirely British in conception and manufacture, it possesses an unusually high percentage of efficiency and can thus operate with far less amplification than is usual.

It is horn-shaped, but employs a field magnet, as do the others of its class. These speakers were used at the Menin Gate services, at Hendon air pageant, and at many other noteworthy meetings. A single speaker can, with only a modest amplifier, adequately serve a crowd of 25,000. One of these speakers was directed up Willis Street to serve the crowd who could not approach the boards, and the other was over the crowd in the front of the building.

A further explanation of the clarity may be found in the fact that 2ZW was picked up on a crystal set and fed through to the amplifier.

It can thus be seen that there was a diversity in equipment of more than amplifiers, but even to the speakers and the method of picking up the station to be reproduced. Those who heard the three outfits will be able to judge for themselves the respective merits and appreciate the differences.

**I**NTERMITTENT signals, clear one moment and weak the next, can often be traced to a coil fitting loosely in its holder.

**T**HE loudspeaker is one of the most inefficient of our instruments, for less than five per cent. of the power put into it reappears as sound-energy.

**W**HEN tuning suddenly jumps from one setting to another apparently without any reason at all, the earth connection is generally at fault.



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