

# THE RADIO RECORD

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Describing the Christchurch-Old Boys' Charity March, 1926.

## The "Relay" and the "Re-Broadcast"

**W**

HAT are these 'relays' and 'rebroadcasts' we hear so much about, and how are they done?" asks the "man at the loudspeaker," who is the modern prototype of the "man in the street."

"Relays" and "rebroadcasts" are two terms which are used somewhat promiscuously by the public. A "relay" is when a telephone line is used to connect the scene of the event to the transmitting station, as, for instance, in relaying a concert from a town hall, the description of a football match from the playing field, or of a race meeting from a racecourse. A "rebroadcast" is when a receiving set is used, as, for instance, when 1YA, 3YA or 4YA picks up 2YA's broadcast from the air and sends it out again. In this case, too, a relay telephone line generally has to be used as well, for the receiving set is usually some distance from the transmitting station. It is placed some distance away in order to be as free as possible from extraneous noises. In the case of 3YA, however, the receiving set is actually at the broadcasting station. That is unique.

### GREAT POSSIBILITIES.

IN Britain and America the relaying of concerts is an accepted feature of the service. There is a network of wires over both countries and all studios are linked together, and programmes are often arranged so that some items may come from one studio and some from another, the whole being rebroadcast from all stations as though it were one programme from one studio.

THE possibilities of relays and rebroadcasts were brought forcibly before the New Zealand public on the occasion of the Ranfurly Shield match at Masterton in July last year, which match was broadcast on relay by 2YA and rebroadcast by 3YA. The telephone line on that occasion was high perfect, the Post & Telegraph Department's engineers having taken meticulous care at every point, and the line was free from outside interference. The next important relay, even longer than the Wairarapa, was on the occasion of the Ranfurly Shield match at Palmerston North. As on the previous occasion 3YA rebroadcast 2YA. Lately, 2YA proposed to relay a concert from Wanganui, 120 miles from Wellington, but a test of the line revealed too much outside interference and the project had to be temporarily abandoned.

### WHAT ACTUALLY HAPPENS.

RELAY lines necessitate considerable arranging, and the transportation of much apparatus—in the way of microphones, portable telephones and amplifiers. When a relay is proposed the Post & Telegraph officials have to be notified, and they complete the line of communication between the studio and the place where the microphone is to be. This does not require the erection of a new line all the way. Between the Post Office and the studios is an underground cable containing a large number of insulated telephone wires in pairs. Where they enter the exchange

they are terminated in the usual manner on the main distribution frame, and at the studio end terminated in rows of "jacks," each pair of wires going to each "jack." When the Post & Telegraph Department is asked to connect up with a certain place where the affair to be broadcast is taking place, the Department avails itself of a pair of the many spare wires which it usually has in one of the cables in the vicinity. From here new wires are run to the place required, which is thus connected through the exchange with the lines to the studio.

### A MINIATURE EXCHANGE.

WITH a complete line from the microphone to the studio, the control man in the broadcasting station then has the music, the speech, the boxing, the football, or whatever it is, on tap and all he has to do to send it on to the operator in the transmitting room is to insert a plug into the "jack." In the announcer's room at each station the array of "jacks" make a miniature exchange. Some are for permanent relays (for instance, theatre orchestras which are regularly on a programme); others are only connected up temporarily, that is, for some special occasion. Here it may conveniently be mentioned that during the Christchurch Diamond Jubilee celebrations last week 3YA carried out 22 relays.

WHEN a relay is being carried out, the Post & Telegraph Department goes to great trouble to get as perfect a line as possible, but there frequently are factors which arise at an inopportune time, and over which the engineers have no control. Listeners then write to the Broadcasting Company and complain about the "noisy" relays.

### A SPECIAL "MIXER."

THE sending out of a microphone to the scene of action does not end the preparations so far as the Broadcasting Company is concerned. The other apparatus mentioned goes too. The Post & Telegraph men carry out their tests of the line, and an hour or so before the time of the performance a relay operator is sent out from the studio armed with the necessary microphones, batteries, amplifier and probably a "mixer," all intended to secure the best result. In cases where noise or induction are prominent, it is necessary to magnify at the microphone end the volume of the voice or music to a fairly high value in order to override the noises which are later picked up on the line. This amplifier is of a similar type to that used when items are being broadcast from the studio, but of course lacking many of the refinements of the studio amplifier.

IN the case of some relays, as in the Christchurch Cathedral, when the service is not conducted from one fixed point, it is necessary to use a number of microphones so as to pick up all portions of the service. On such occasions a special apparatus known as a "mixer" is used by means of which the output from a number of microphones may be combined and put into the amplifier in the proper proportions.

### STABILISING THE VOLUME.

APART from the drowning of the extraneous noises on the line, the purpose of the amplifier is to bring the volume up to a useful value. The ordinary broadcasting microphone is, in spite of popular opinion, a very insensitive device, much more so than the conventional household telephone. Owing to details of construction rendering it of exceptionally high quality, the volume level is sacrificed, and it is to bring the volume up to a useful value that the amplifier is used.

GREATLY magnified, the music or speech arrives too loud to be put up to the studio amplifier without causing it to be overloaded. Under these circumstances the volume level is reduced by means of an artificial line or resistance network until a suitable volume is obtained. Then the music goes through the usual studio equipment and into the transmitter in the same way as when items are rendered in the studio.

IN rebroadcasting, a similar procedure is adopted but it differs to the extent that a good receiving set instead of a microphone is used at the relay end. A locality is chosen which is reasonably good for radio reception, and the broadcast which is picked up is sent through the telephone line and through the studio amplifier as for a relay.

IN some cases, as at 3YA, an outside receiving station is not needed. The reception is done in the transmitting room. Listeners frequently complain about the difficulty of cutting out a local station in order to listen to another, but it is only a question of using a sensitive receiver and an efficient wave-trap. This is evident from the experience of 3YA where the antenna is strung between the towers underneath the aerial which transmits 500 watts, and where the receiving set is only eight feet away from the transmitter.



Where 3YA listen in to 2YA. The receiving set is seen on the wall in front of Mr. J. M. Bingham, the Broadcasting Company's chief engineer. The receiving set is only eight feet away from the 500 watt transmitter, and the receiving aerial is below the transmitting aerial.

## Television

### THE PUBLIC MUST WAIT

#### SHADOWGRAPH OUTFIT

Press dispatches, published in the United States, from London announce that Selfridge's (the big London company) is selling Baird television outfits at a price of thirty-two dollars (about £6 5s.) per set. Investigation reveals, however, that this equipment consists only of the parts for building a shadowgraph transmitting outfit. The amateur transmitting enthusiast can send, at his home, a moving hand or a shadow made by a cardboard figure held before the outfit. The cost of the receiver parts, to be marked later, will be approximately the same. The shadowgraph offers a field for entertaining home experiments and it should promote interest in the problems of television.

#### Five Years, Yet.

As to the commercialization of television in the United States, a statement made by David Sarnoff of the Radio Corporation of America, before the New York Electrical League, is significant. He is quoted in the Press as saying: "We will hear much more about these developments within the next year. My guess is that, within five years, they (television receivers) will be as much a part of our life as sound broadcasting is now."

#### Only Experimental.

An unnamed representative of the R.C.A. is quoted in the New York "Times," when questioned as to how soon the Alexanderson still picture transmission apparatus will be placed on the market, as follows: "Oh, it will be a long time. Look at the apparatus. It is too cumbersome. It is only in experimental form."

Considering the great number of years that photo transmission has been the subject of experiment, both in U.S.A. and elsewhere, and the success obtained by such pioneers as Korn, Jenkins and Baird, and the recent successes of the Bell Laboratories and Alexanderson, it is surprising that picture broadcasting is so slow in becoming a supplement to tone broadcasting.



**NO ENERGY!**

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## The Radio Patrol

### SYDNEY POLICE SYSTEM

#### RAPID ACTION

ACCORDING to the New South Wales Commissioner of Police, Mr. James Mitchell, radio has increased the efficiency of the force by a hundred per cent.

"I could not do without it now," says Mr. Mitchell.

In the detection of crime everything depends on speed. And, with the widespread use of radio by the New South Wales police, their speed in getting immediately to the scene of a crime has resulted, times without number, in the arrest of an offender himself staggered by such efficiency.

Take this instance, in which, though there was no arrest, it will be seen that had burglars been at work they would have had no chance. At 10.10 p.m. two of the wireless patrol cars received word over the air that the burglar alarm was ringing at a big departmental store in Oxford Street, Sydney.

At 10.12 p.m. the crews of both patrols had surrounded the building, while a third was on its way to the home of the proprietor to bring him to the scene.

Before he got there the place had been searched from cellar to roof, and there was no sign of burglars. It was ascertained that an accident to the wiring had set off the alarm.

Wireless patrol reports, supplied each morning to the executive officials of the police, are eloquent witnesses to the efficiency of the scheme.

At least 12 calls are attended each night, and on these rare occasions when there is "nothing doing" test calls are sent out regularly from the headquarters installation to ascertain that reception is O.K.

#### Caught in the Act.

At 1.15 o'clock on a recent morning the alarm was given that a suspicious character had gone into the yard of a shop at Daceyville.

Tapped out to the police patrol, the message reached one car at Rose Bay. Within 10 minutes the police were on the spot and had arrested a young man in the act of breaking into the store.

Before the use of radio it might have been half an hour ere a patrol was informed, since they telephoned only at half-hourly intervals. Scores of criminals caught on the job—and every criminal hates to be apprehended—thus, since he can offer no defence—will testify, not politely, to the swiftness of action which characterises the use of radio by police.

And with the proposed establishment of transmitting sets in each Australian capital city capable of interchanging criminal information on a special wavelength, the life of a criminal will be more hazardous than ever. As in all things, there is a humorous side to the work of the wireless patrol.

At 12.30 on a morning of last week the police received a hurry call to a place in Darlinghurst, a woman having complained that two men were prowling about her backyard. Investigation showed that actually the noise which had frightened her was caused by a marauding cat's efforts to reach the canary cage left hanging on the wall of a shed. With scores of meritorious captures to their credit, their wonderful efficiency through the use of radio and their powerful influence on criminals contemplating night crime, little wonder that the Commissioner says he wouldn't be without his wireless patrols.

A REUTER message states that a wireless telephone company has just been formed for the purpose of installing receiving sets on the trains of the Hungarian State railways and also in the waiting rooms at the big stations.

It has been officially computed that the world contains no less than 18,000,000 radio receiving sets.

## Controversy

### B.B.C.'S NEW POLICY

#### THREE PARTIES IN TURN.

THE British Broadcasting Corporation has issued the following announcement with regard to the removal of the ban on controversial subjects:—

"Careful consideration has been given by the Governors to the situation consequent on the removal of the ban on controversy.

"As already announced, the new material made available will be introduced gradually and experimentally, and no fundamental change in programme policy is intended in the immediate future.

"Controversy, political, and economic, will be admitted on clearly defined occasions, with adequate safeguards for impartiality and equality of treatment, the subject being dealt with in such a way that the main opposing views can be presented on occasions clearly contrasted and linked as closely as possible.

"Debates and discussions will be the normal procedure, and the removal of the restrictions is not to be interpreted to mean the immediate introduction of indiscriminate controversy in Talks and Outside Broadcasts.

"Each of the three political parties has been offered a Talk in the near future, and it is hoped to arrange debates on subjects such as 'Payment of wages according to need or ability,' 'Road versus railway transport,' 'The surtax,' and 'Economic versus political functions of trade unions.'"

#### "Debates" and "Discussions."

It is understood (writes a correspondent) that "controversial occasions" are to be created for this new material, and that both speakers and listeners will be informed that there is to be a full and frank expression of view.

The wording of the resolution for each debate will be very carefully considered, and is to be so arranged that each main point of view on the subject may be clearly presented. The speakers as far as possible will be equally matched, not only as authorities on the subject, but also as debaters, and—what is equally important—as effective broadcasters.

#### "Speakers from all Europe."

THE "controversial occasions" will be divided into two classes: Debates and Discussion. The debates will be between two or three speakers, and there will be the usual opportunities for reply and rejoinder.

The discussions, on the other hand, will be a series of positive contributions to a given subject, in which, perhaps, as many as half a dozen persons speaking if necessary from different parts of the country will take part, each contributing a statement of the case from his particular point of view. Here there will be no opportunity of reply. One speaker may be in Glasgow, a second in Manchester, a third in London, a fourth in Plymouth, and so on. And, later on, when the various links in the European connections have been definitely established, there may be, for example, a discussion on the art of music, in which speakers in Paris and Vienna, as well as those in Edinburgh, London, and other centres will take part. The contributions to these discussions will, if they are not given immediately one after the other, follow each other as closely as possible.

#### Only Once a Week.

THE removal of the ban on controversy will not make any change in the character of the vast majority of talks or broadcasts of after-dinner speeches, and so on. These will not be controversial occasions, and therefore there will be no equality of opportunity for the various points of view to be put forward; they will be continued very much on the same lines as before. It may be emphasised, too, that the change will be experimental and gradual, and that for the present the new material will not be extended to religion. And, at any rate, at the outset, "controversial occasions" will probably not appear in the programmes more than once a week.

Although the subject of controversy has aroused keen interest in some quarters, the B.B.C., I understand, do not find that this interest is reflected as yet among the vast majority of listeners, whose chief concern, they say, is entertainment.

#### A BROADCASTING CLUB.

Montreal can boast, as far as it is possible to ascertain, of having the only "broadcasting club" in existence. The members hold monthly luncheon meetings, have a speaker who discusses a well-known radio topic of the day, and questions are asked, the whole resulting in a closer co-operation between local radio stations. The membership is composed of station directors, announcers, technicians, newspaper radio editors, and all and sundry who are in direct contact with radio matters. It is the endeavour of the club to raise broadcast programmes to a higher level, and educate the public to a greater appreciation of good music.

It is stated that, owing to the increasing popularity of broadcasting in Iceland there is a possibility of the present 1kw station at Reykjavik being replaced by a 5kw installation.

## Bells, Bells, Bells

### MAGIC OF THE CARILLON

#### POPULAR B.B.C. ACTION.

ALL within range of 2YA will one day rejoice to hear Wellington's carillon broadcast. It will be a feature of the city's life, and a splendid memorial. A taste of carillon music was given last week from 2YA through a fine gramophone record (which was played in the children's hour), and will be repeated again during an evening session, probably this week.

One of the best things the B.B.C. engineers have done this year was to take their microphone and equipment to the Carillon Tower at Loughborough, England, and link up this collection of bells, the largest in the country, with the Birmingham station.

The beautiful music which rises and falls in this heart of the green wolds of Leicestershire may now be heard throughout the country, and indeed over half the world.

This carillon was built by Loughborough as a memorial to Loughborough men who fell in the war. Now that the recitals are broadcast listeners everywhere may know how beautiful carillon music can be.

#### How the Carillon is Played.

The broadcasting is a triumph for the B.B.C. engineers, for the music of bells is very difficult to broadcast satisfactorily. The note of each bell is rich in what are called harmonics and overtones, and these impose a strain on the microphone. Actually each bell emits five notes when struck, and in the perfectly tuned bell these are all in tune with each other and are therefore not noticed. At Loughborough there are 48 bells, the largest big enough to cover several children and the smallest no bigger than a small flower-pot. They are played from a clavier, in which the keys are very much like those of the organ keyboard, but they are made of wood and the carillonneur strikes them with the underpart of his half-closed hands, which are protected by gloves. The work is hard, but he is able to cover a wide range of musical expression.

The difficulty for the engineers was to find a position for the microphone where it would respond evenly to the whole range of tones and be free from the vibrations of the tower during the recital. Uncle Mike, as they call the carillonneur, was not easily pleased. It was tried in and out of the tower, in many positions, but all were disappointing. At last the right position was found by suspending the microphone over a rung in a ladder near the top of the tower, directly above the bell chamber.

#### An English Standard.

It served splendidly here, and received the silvery notes of the little bells just as well as the booming notes of the large ones. So it was left, and the leads were taken down the outside of the tower to a room half-way down, where the amplifier, connecting with the landline to 5 I T, was installed. The carillonneur at Loughborough, Mr. W. E. Jordan, is quite a young man, but he is doing much to establish an English standard of carillon playing distinct from that of Belgium, the home of the carillon. They love the carillon in Belgium. At Malines, Antwerp, Bruges, and Ghent, crowds gather in the evenings, when the bustle of the day has died down, to listen to the music coming softly from the lofty towers.

#### 3LO SHORT-WAVE

#### RECEPTION IN BRITAIN.

ALL doubts as to the probable outcome of the short-wave experiments which have been carried out by 3LO, Melbourne, during the last three months, were set at rest when the last English mail was opened in the 3LO studio. More than 150 letters were received from England and Scotland, in addition to a few from the Irish Free State and some from Belfast and Londonderry in North Ireland. In many cases scarcely any preparations had been made for the attempt to listen to the Antipodes, but the results obtained were little short of remarkable. One listener in Bath was able to name all of the items on the programme with one exception, and the set he was using was a two-valve receiver made by himself. What made the reception the more remarkable was the fact that Bath is surrounded by a fringe of hills which make the reception of the London and other English stations generally very difficult. Many of the letters referred to the fact that the enthusiastic British amateur, Mr. Marcuse, was broadcasting at the same time as 3LO, and as he was using a wave length of 32.5 metres, and 3LO was working on 32 metres, many listeners found it extremely difficult to cut him out. Mr. Marcuse was using a power of 1000 watts. Morse signals from the Continent and from the Welsh side of Bath also caused some interference. However, despite such interferences, every letter was full of enthusiasm, and 3LO is gradually gaining an army of listeners, not only in Britain, but in many other countries throughout the world.

## 2ZF Palmerston North

### DETAILS OF THE STATION

#### A POPULAR CENTRE

PALMERSTON NORTH people are rightly proud of 2ZF, their local radio station, and the Borough Council recently indicated its appreciation by increasing its annual payment to £50.

The following particulars will interest listeners who have heard this station:—

The station was officially opened early in March. The whole of the station was built by the members under the direction of the president, Mr. Waters. The transmitter is housed on the roof of Collinson and Cunningham's buildings, Broadway, Palmerston North, and consists of a 5-watt speech amplifier, two 50-watt modulators, and one 50-watt oscillator, all wired according to the diagrams of a well-known type of transmitter. The plate and filament voltages are supplied from an Esco motor generator supplying 1000 volts through a suitable switchboard with automatic cut-outs to protect the valves, etc. The transmitter is built in a wooden frame and enclosed in plate glass. There are 10 meters on the transmitter to show the operators exactly what is taking place in any of the circuits. The aerial is a 5-wire cage 40 feet above the roof, which is about 60 feet above the pavement.

The studio, which has been refurnished and draped, is situated on the second floor, and connection between the transmitter and the studio is obtained by means of a signalling arrangement of lights. The amplifier cabinets are in oak and there are two of them. No. 1 is used for the Weston electric microphone, and the other is used for relay work, electric pick-up on the gramophone, and the emergency mike. All the work on these was done by members, and gifts of money and material have been received from firms in Christchurch, Wellington, Feilding, and Palmerston North.

Since the station was put on the air again the membership has increased from 50 to 230, and more are enrolling every day. The station is financed by means of members' subscriptions, donations, etc., and receives nothing from the annual license fees paid by listeners, although there seems to be that impression among listeners. The operators and announcers give their services free, and so do the artists also.

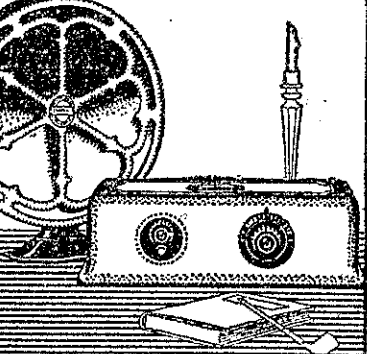
The schedule is: Wednesdays, 6.15 to 9 p.m. Sundays, 3 p.m. to 4.30 p.m.; 7 p.m. to 9 p.m.

Wavelength, 285 metres. Power, 50 watts.

Those operating the station set out with the ideal of perfection, and have received many congratulatory messages on this score. The station has been heard in Australia.

THE London "Wireless Export Trader" reports: "The B.B.C.'s short-wave transmitting station, 5SW, is becoming increasingly popular among the outlying parts of the world, while reports of good reception are coming in every day. A number of overseas stations have rebroadcast the home programmes, and the latest of these is C.F.C.A. of Canada. This station is owned by the "Toronto Daily Star," and, we hear, gave a two hours' rebroadcast of the 5SW programme."

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RADIO



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MRS. RAPLEY.

THE way in which a broadcasting station can handle public functions for the information and entertainment of listeners was demonstrated by 3YA during the Diamond Jubilee celebrations of Christchurch last week.

ON the four days over which the celebrations were spread, there were many attractions, as is evidenced by the fact that there were 22 relay lines to 3YA. The speeches at the many public functions were broadcast perfectly, and in the case of spectac-

## Pioneers Contribute Unique Children's Session.

AN unofficial event of a most unusual nature provided one of the many attractions put over the air from 3YA during the celebrations of Christchurch Diamond Jubilee last week. The children, and grown-ups, too, were given a unique opportunity of hearing four old ladies speak from the studio, of their early impressions of the city. These pioneers are 3YA's oldest broadcasters.

ular events, such as the big procession on Monday, listeners "saw" it through the eyes of 3YA's announcer, Mr. Clyde Carr, whose descriptive work was very good.

ONE aspect which was of outstanding interest was that of the



MRS. T. V. WHITMORE.

children's session of Uncle Sam and Aunt May on Saturday evening. This was not one of the official jubilee celebrations, but it was nevertheless of a memorable nature. Four old ladies came to the studio and spoke to many thousands of listening children about the early days of Christchurch. These old pioneers were a most interesting link with the past.

ONE, Mrs. T. V. Whitmore, aged 83, is the last lady survivor of the "Charlotte Jane," one of the four ships which brought the first immigrants to Christchurch in 1850.

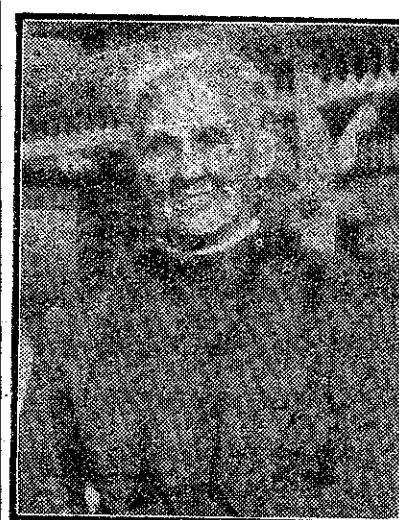
Another, Mrs. Rosindale, aged 73, mother of Mr. J. S. Neville, Christchurch Town Clerk, came to New Zealand on the "Cressy."

Mrs. C. S. Bell, aged 84, mother of the programme organiser at 3YA, played a lively pianoforte solo, "Weber's Last Waltz," with all the abandon and skill for which she was noted two generations ago.

ANOTHER old pioneer, Mrs. Rapley, gave a very graphic account of

her first impressions of the site of Christchurch when she as a child arrived with her parents. Mrs. Rapley spoke without reference to any notes.

STILL another pioneer, Mr. Bell, forwarded a most interesting letter,



MRS. M. ROSENDALE.

MRS. C. S. BELL.

descriptive of the early days of the city. The whole entertainment was unique, but it was distinctly appropriate for a children's session owing to comparison of conditions, special reference being made to the modern wonder radio.

AUNT PAT, Children's Session Organiser at 3YA, arranged for the appearance of the old pioneers at the studio. She endeavoured to induce some of the male members of the oldest generation in Christchurch also to speak, but they were "far too shy."

## STORING THE BATTERY

### TWO SAFE METHODS.

OCCASIONALLY one is faced with the necessity of storing the accumulator for a few months. It may be that a holiday is to be taken, or that business calls us away for a month or two. Now comes the question, what shall I do with my accumulator to keep it in good order and condition until I require it again? Two methods of doing this are available, each calling for a special treatment of the cells. Whichever is used, care should be taken to place the accumulator in such a place that dust will not collect on it.

The reason for this provision is that dust makes a conductor between the terminals, and if we wish to counteract sulphation it is essential that the charge be retained in the plates during the storing. If dust is allowed to collect on the top of the cells a short circuit will be formed by it between the terminals, and the plates will become at least partially discharged. The result of leaving an accumulator in a partially charged condition and containing electrolyte is to assist in the formation of sulphate of lead, which is commonly called sulphation. If we adopt the second method where a liquid is left in the cells the same rule applies as to the dust.

### The Dry Method.

THIS is the better and is recommended. Proceed as follows:—1: Give the cell or cells a good charge, so that all the plates are in good condition. 2: Empty out all the electrolyte. 3: Refill cells with distilled water only and discharge the cells until the voltage or charge condition has fallen 10 per cent. 4: Empty out all the water, and allow cells to drain completely. Absolute dryness should be striven for. Wash away all traces of electrolyte from the cell terminals, and give the terminal stems a good coat of vaseline. 5: Store away in a dry dust-proof place.

The reason for discharging partially after the water has been added is to avoid heating of the negative plates when they become dry. The water absorbs any electrolyte which has remained in the pores of the surface of the plates. It is imperative that all liquid be removed from the cells, otherwise sulphation will set in immediately.

### The Wet Method.

1: See that the plates are well covered with electrolyte, but below the lead connecting bars inside the cells. 2: Place on charge until all plates have received a good charge (hydrometer 1.270 or over). 3: Carefully clean all the tops of the cells, the terminal stems, and give all the metal parts a coat of vaseline. Now store away as in the dry method. In this method a periodical charge is beneficial, but not essential. It depends on the condition of the battery when stored, the type of plates, and the quantity of sediment which may be in the cells. If an examination shows the charge condition to be low, say, after a few weeks' storage, it will be necessary to give it an additional charge.

### Taking Batteries Out of Storage.

When it is desired again to use the battery, it will be necessary to give it a charge until maximum charge condition is again attained. If your battery is showing a whitish coating on the plates before you commence storing operations it would be well to give it a lengthy charge at a low rate of charging until the plates become free of the deposit.

WMHA, the New York station, is owned by Troop 707 of the Boy Scouts' Association, of Washington Heights. The wavelength is 230 metres, and a power of 30 watts is used.

## LIMITING CONTROL

### COUPLE CONDENSERS.

EVERY effort is now made to reduce the number of controls on a set to a minimum, and this is particularly the case with the tuning controls, for it will be realised that the ideal set will only have one tuning control, and that so arranged that any particular reading on the dial will always correspond with a certain wavelength, so that the tuner can be calibrated, and any station instantly found.

When a set consists merely of a detector valve, with or without a low frequency amplifier, there is no difficulty in limiting the tuning controls to one; in fact, no more is necessary; but when one or more stages of high frequency amplification is to be used the problem is different, for each stage has to be tuned. The only method of providing a single control is to couple the variable condensers together, so that they may be all turned by one knob at the same time.

Each condenser is connected in parallel with a coil to make the tuned circuit. It will be obvious that if the wave-length of each circuit is to be the same, and is to remain the same when all the condensers are rotated together, then the tuned circuits must

be exactly matched at the minimum setting of the condensers, and each condenser, when rotated, must increase the capacity of each circuit by the same amount for each degree of rotation.

### Matched Inductances.

THE first essential is to obtain coils with exactly matched inductances, for wave-length is made up of inductance and capacity, and as the inductance in each circuit is fixed, being almost all provided by the coil, and the capacity is the only variable, it will be obvious that it is first necessary to make the inductance of each coil identical.

Assuming that each coil is matched, it will be seen that any difference in the wave-length of each circuit must be due to a difference in the capacity. The circuit coupled to the aerial will, for example, have some of the aerial capacity added to it, and the other circuits will differ slightly, also due to the difference in the capacities of the wiring, and slight discrepancies in the minimum capacities of each condenser. The sum of all these capacities in each circuit is known as the minimum capacity, and is a non-variable quantity. To match the circuits, capacity should be added to those circuits with the least minimum capacity to make them equal to the one with the greatest amount.

The capacities may be matched by placing small variable condensers in

parallel with each tuning condenser, except the aerial tuning condenser, and then adjusting each one until they synchronise at every setting.

## VOLUME AND QUALITY

### VIRTUE OF POWER VALVES.

In a case where quality, rather than quality plus tremendous volume is the primary consideration, there is nothing to be gained by the use of very high "B" battery power. To be enjoyable, the device of very high voltage would of necessity have to be operated at a point considerably under maximum output. If a proper means of controlling this volume were used, the quality would not suffer; but it would not be better than the maximum output of an amplifier more in accordance with the tastes of the average set owner and the acoustical capacity of his home.

### Detuning Condemned.

Of course, there is no denying the fact that power and fidelity in reproduction are, up to certain points, closely associated. The set owner should remember, however, that a moderately-powered amplifier puts every bit as much energy into the loudspeaker as a very-high-voltage device operated at a fraction of its volume. In the latter

case, the energy, as expressed in the A.C. variations of the plate current, remains in reserve, or is dissipated by means of the volume control. When control is attempted by means of reducing the filament voltage, or through slightly detuning the set, the results, particularly in the case of the high-voltage amplifier, are far from satisfactory. In the case of sharply-tuned receivers, serious distortion results from the suppression of the side bands when the set is detuned; while extraneous noises, static, line disturbances, etc., are amplified out of all proportion to the signal.

### Volume of Quality.

In the last analysis, quality in the reproduced signal is not so much a matter of volume as of freedom from overloading. Were it purely a matter of amplification, valves of 201A type, or the "high mu" valves, would be far superior to those of the 171 and 210 types. The superiority of the power valve lies, not in its ability to amplify, but in its ability to handle great volume without overloading.

When, for example, a valve of the 201A type is used in the last stage of an amplifier with, let us say, 90 volts on the plate, the sounds issuing from the loudspeaker are apt to be thin and with the tones in the lower end of the musical scale missing. Now, as we increase the plate voltage, the quality of reproduction improves until a point is reached where, on loud signals, serious distortion occurs, owing to the fact that valves of this type have a comparatively high amplification factor, so that signals of even moderate intensity drive the grid positive. This overloading, in the case of the 201A type, occurs long before the volume has reached a point commensurate with the requirements of the listener, and before sufficient current is flowing in the plate circuit to reproduce accurately the bass notes. In a broadcast station, for example, only signals of little more than telephone intensity are expected from valves of the 201A type; whereas, in the set of the average radio enthusiast, they are expected to furnish unlimited volume.

## CAPACITY OF A BATTERY.

### HOW TO ESTIMATE IT.

The capacity of a wet battery has nothing whatever to do with "capacity" in the sense that we use the term applied to condensers. What is meant is the accumulator's capacity, to give up a certain amount of electricity.

An accumulator is designed to produce a certain current, and this is reckoned in amperes; and it will give this current for a certain time, which is reckoned in hours. The product of these two factors is called the "ampere-hour capacity" of that accumulator.

For instance, if the actual capacity of an accumulator is 40 ampere hours, it means that this accumulator will give 1 ampere of current for 40 hours. Similarly it would give half an ampere for approximately 80 hours, or it would give 2 amperes for 20 hours, before recharging became necessary.

So we see that the ampere-hour capacity of an accumulator can be regarded as a convenient method of finding how long it would last if it gives a certain current, or conversely how many hours it will take to discharge it, if the discharge is at a certain rate.

A good idea of the number of hours an accumulator will last without recharging can be obtained merely by adding together the current consumption of all the valves in the set; then divide this figure into the actual ampere-hour capacity of the accumulator and the answer will be the number of hours that it will last (approximately). It is important to note that this applies to the actual ampere-hour capacity of the accumulator and not to the "ignition" rating, which is generally about twice that of the actual ampere-hour capacity.

# Make your Radio 100% more efficient

You can! Simply by using Mullard Valves—the valves with the wonderful P.M. Filament. A prominent Christchurch Electrician says: "I bought them to cut down operating costs, but they increased the clarity and volume wonderfully—I consider my set 100 per cent. more efficient."

Operate on one-tenth ampere, give much longer life, filament practically unbreakable.

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# THE NEW ZEALAND Radio Record

PUBLISHED WEEKLY.

Printed Tuesdays to permit of effective distribution before the week-end, with full copyrighted programmes for the succeeding week. Nominal date of publication Friday.

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Rate of Subscription: Single copies, 3d.; Annual Subscription (if booked), 12/6, post free; normal rate, cash in advance, 10/-, post free.

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No responsibility is accepted for blocks, stereos, etc., remaining unclaimed after last use, beyond a period of three months.

A. J. BEIGHWAY,  
Managing Editor,  
"The N.Z. Radio Record,"

P.O. Box 1032.

Dominion Buildings, Mercer Street, Wellington.

WELLINGTON, FRIDAY, JUNE 8, 1928.

## EDITORIAL NOTES.

DAY by day the potency of the radio revolution is becoming more marked. As an aid to travel and exploration it is now essential. It is the handmaiden of aviation, and recent events definitely place it as indispensable in any major flight. Apart from that scientific development, the reaction from radio influence in everyday life is becoming apparent. The biggest community where its influence has been felt for the longest period is the United States. Throughout the last seven years it has steadily grown and evolved to its existing compass, and an effort can now be made to assess its influence upon the life of the community. An analysis to which we draw attention elsewhere in this issue credits to radio an important part in stimulating the circulation of newspapers. The reasoning in support of this theory is, in brief, this: Its universal audition stimulates interest in whatever subject is dealt with, and provokes the desire for fuller information in the written word. There thus has been created a more general human demand for information. In the effort to supply this, the newspaper Press itself has enlarged its service and increased its contact with the public. The fact that the general newspaper circulations of the United States in seven years have increased over 33 per cent. calls for some explanation. The Press itself ascribes a large part of its own growth to the stimulus to general education and culture given by radio broadcasting.

IN the same analysis the confession is made that the first orgy of the public for jazz through the medium of its new toy, radio broadcasting, has passed, and the most popular programmes now are those which cater for cultural entertainment—those which give good or even high-class symphony concerts, classical music, etc., and what is perhaps surprising to our New Zealand ears, talks on historical, educational, religious, and instructive topics, together with outlines of national and international politics and domestic economy. The American people always have been lovers of speechmaking and the art of conversation. The British are a more reticent people. We are not lovers of verbosity. But we do think the time is coming when the demand will be for a fuller use to be made, in the interests of the community, of the outstanding public talent amongst us.

READERS will be aware that due attention has been given in the compilation of our programmes to this aspect of radio service. If anything, those mainly concerned with musical entertainment have objected to "too much talk," and that objection has been so far successful as to exclude from evening-programmes anything but the best of talks. In that we quite concur—the talks must be good, and above all "well delivered." Too much emphasis cannot be given to the point of good delivery. More than ever, when the speaker cannot be seen and his personality must be conveyed only by voice, must that voice be pleasing and effective. Time was when public speakers devoted careful attention to the art of public speaking. With the growth of the cheap Press and the greater effectiveness of the printed word, the art of public speaking suffered a decline. Radio is going to rescue and restore the art. Radio addresses will be listened to only in proportion to their appeal and attractiveness. It is the duty of the speaker to give his message the setting of effective delivery.

FRANKLY we are glad to see recorded the trend in America towards interest in solid intellectual matter "over the air." This will widen the radio audience, will interest the intellectual as well as the musical, and will stimulate the general life of the community in encouraging interest in a wide range of subjects. To many an incessant diet of music is indigestible. They require something on which to whet their brains, apart from their senses. It will be increasingly the part of radio to supply that brain-food and promote contact with the community's thinkers.

## CANTERBURY JUBILEE

### ITEMS FROM 3YA.

DURING the relays in connection with the Diamond Jubilee celebrations in Christchurch, 3YA used on several occasions a microphone of the condenser type. It was this kind of microphone which was placed on the balcony of the United Service Hotel for the purpose of picking up the chiming of the cathedral bells. All the relays in connection with the celebrations were particularly good.

TO celebrate the passing of 60 years in the life history of Christchurch, the motor generator at 3YA required to revolve 2,385,000 times. During the four days of the Diamond Jubilee celebrations in Christchurch 3YA was on the air for 26½ hours, an average of 6½ hours a day, one of these days being a Sunday. This meant a busy time for the motor generator, as a simple calculation based on 1500 revolutions a minute will show.

CONTINUOUS fiddling with the adjustment of a crystal receiver is not only unnecessary, but is often responsible for corresponding clicks in the receivers of your neighbours.

## CATHEDRAL BELLS "ON THE AIR"

### SOME NOTEWORTHY BROADCASTS

#### FINE TRANSMISSIONS BY 3YA.

RADIO listeners have been impressed by the recent fine broadcasts from Christchurch Cathedral, which have been said to equal any of the cathedral broadcasts done by the B.B.C. at Home.

The broadcasts referred to—Miss Maude Royden and the Diamond Jubilee service—took place on Sunday afternoons, and in the former instance was rebroadcast by 2YA. The second broadcast marked a notable occasion, and the transmission was specially good, the broadcast of the singing and of the organ music being perfect. The service was also noteworthy from the fact that ministers of outside congregations took part. The Rev. J. K. Archer, minister in charge of the Baptist Church, Sydenham, and first Labour Mayor of Christchurch, preached the sermon.

SOMEWHAT of a novelty, but a most interesting one, was the broadcast of the Cathedral chimes on Monday, May 28, marking the sixtieth anniversary of the proclaiming of the Borough of Christchurch. The occasion was when the Cathedral bells were put "on the air." The radio operators had much difficulty in ascertaining the best position for the microphone. Two positions were finally decided upon—one in the tower and one on a balcony on the other side of the Square. It was the latter which was eventually used.

The very fine organ installed last year by Messrs. Hill, Norman, and Beard contributed largely to the success of the broadcasts. This organ is considered to be the finest and largest church organ south of the Line. It has three manuals (three rows of keys) and pedals, and sixty-six stops, besides various couplers and controls. There are nearly 3500 pipes, ranging from 32 feet to three-quarters of an inch in length. The console (or keyboard) is detached from the main organ, the only connection being an electric cable about 100 feet in length. Miles of wire and thousands of electric contacts and electro-magnets are used in controlling the various stops.

INSIDE the organ are forests of pipes, many of them contained in huge chambers as big as a drawing-room. These chambers are called "swell boxes," and are used to control the power of the sound. As the fronts of the swell boxes are opened and closed so does the sound increase and decrease in intensity.

Beneath the chancel is the machinery for supplying the wind to the organ. This is composed of huge rotary fans, driven by a 16 h.p. electric motor. Connected to this motor there is also an electric dynamo, which is used to supply the current for the action of the organ.

### FORM OF ANNOUNCING

#### 3YA ADOPTS NEW RULE.

DURING last week the new form of announcing—the omission of the names of the performers—was introduced at 3YA.

The innovation caused some surprise at first, and as it coincided with the advent of a new announcer (the Rev. Clyde Carr being on holiday), the studio telephone was in constant use, many listeners directing the attention of the announcer to what seemed to them to be an accidental omission on his part.

Next evening, following a published explanation by the company, there was not a single communication. The innovation (so far as New Zealand is concerned, for it is an established practice in Britain) was at once approved.

THE explanation which the Broadcasting Company published was as follows—

"In response to many requests that the length of announcements should be reduced, the Broadcasting Company proposes in future to omit the names of the performing artists. This practice has been in force for some time now at 2YA, and is meeting with general approval. The full programmes, with the names of the performers and the items to be rendered, appear in the daily papers, so there would appear to be little need for announcing in full the names of both artist and the piece to be performed, unless there has been an alteration in the programme and a new artist appears.

"It has been suggested that the non-announcement of the performer will add considerably to the interest of the programme. After the experiment at 2YA it is evident that this is so, and the Broadcasting Company is therefore extending the practice. There is little doubt that the additional interest created will more than compensate for the small inconvenience which may be caused to a few people who may wish to know the names of the performers, and who may not have a daily paper on hand."

THE placing of a fairly high capacity fixed condenser across the telephone or loudspeaker terminals helps to improve tone. A fixed condenser in the aerial lead helps selectivity.

## MUSIC AND DRAMA

### 2YA COMMITTEE MEETING

A MEETING of the Honorary Musical and Dramatic Committee of 2YA was held at the studio on Monday evening. Mr. Harrison Cook (National Repertory Society) presided, and there were also present: Messrs. A. Stanley Warwick (Orphans' Club), J. Carr (Charley's Aunt Club), R. Lyon (Savage Club), W. E. Caldwell (Royal Wellington Choral Society), I. Levy ("Dominion"), G. L. Giesen (Hutt Valley Choral Society), V. R. Bennett (Harmonic Society), and the company's official representatives. Apologies for unavoidable absence were received from Messrs. E. Palliser, H. Temple White (Commercial Travellers' Choir), Len. Barnes (Orpheus Society), Campbell (Wellington Competitions Society). An hour was spent in a profitable discussion of ways and means whereby the committee could best further the interests of the musical and dramatic arts, and also the aims and objects of the various organisations represented on the committee. Several valuable suggestions relative to broadcast programmes were put forward and discussed, and it was decided to formally recommend that a "literary evening" should be scheduled for, say, once a month. In this connection a suggestion made by Mr. Levy met with unanimous approval, i.e., that while it was eminently desirable that time should be given to broadcasting excerpts from the works of the great masters of literature, it was also important that the essential feature of variety should be carefully preserved. It was agreed that to this end a "literary evening" should mean not the allocation of an entire programme to, say, the works of Dickens or Shakespeare, but at the most two quarter-hour sections (one in each half of the programme) for the literary feature, and the balance of the programme to be of a vocal and instrumental character. As the outcome of a suggestion made by Mr. G. L. Giesen, it was resolved that efforts should be made to secure the broadcasting, either from the studio or on relay from their actual performances, of portions of the works of the various choral societies. Here, again, it was deemed inadvisable to recommend that an entire evening should be devoted to any one particular class of music, and the representatives explained that it would be quite practicable to meet the wish of the committee by relaying selected portions of a choral concert in conjunction with a studio programme. Members of the committee were cordially invited to attend the studio concerts at their convenience.

### 1ZQ, AUCKLAND

THIS station, 1ZQ, working on the wavelength of 253 metres, has been heard largely throughout New Zealand, and occasionally in Australia. The usual night for transmission are Monday and Thursday, from 8 to 10 p.m., and Sunday afternoon from 4 to 6. Special features of the programme are a radio talk at 8.30, during the evening transmission, and a children's hour on Sunday, when Uncle Q. talks to the "kiddies." On Sunday, too, there is a special tea-time session from 5.30 to 6 p.m., with orchestral and instrumental music. The first Monday in the month is generally made a dance night. Programmes put over are built from singers, speakers, instrumentalists, and gramophone records. The power of the station is being increased to 250 watts in the near future, when the service will be greatly improved. The announcer and operator of 1ZQ is Mr. Roy Keith. His service to radio has extended over a number of years, and has been of definite value.


We are glad to give the foregoing particulars, as through some mischance this station was not included in the tabulated list of New Zealand stations in the "N.Z. Radio Listeners' Guide."

## AUSTRALIAN BROADCASTING

### BIG COMBINE FORMED.

Following the decision of the Broadcastings Company of Australia Pty., Ltd., and the Associated Radio Co., Ltd., which controlled respectively the Melbourne broadcasting stations 8LO and 3AR, to merge interests and combine into one company a meeting was held recently to elect directors of the new company. This company will be known as the Dominion Broadcasting Company. The directors chosen were Sir George Tallis (of Messrs. J. C. Williamson and Co., Ltd.), Mr. John Tait, Mr. George Wright, Mr. Kiernan, M.L.C., and Mr. R. F. Gardiner. Sir George Tallis, Mr. Tait, and Mr. Wright will represent the interests of 8LO in the new company, while Mr. Kiernan and Mr. Gardiner will represent those of 3AR. It is understood that the Dominion Broadcasting Company will hold interests in Sydney broadcasting services, and under a working agreement it will also direct the service from the Perth broadcasting station 6WF. It is possible that agreements will be made shortly whereby the new company will also gain interests in broadcasting services in South Australia and Tasmania. If this occurs the one company will then exercise at least partial control over services in every State but Queensland, and a substantial measure of co-ordination not only between services in one State but also between inter-State services will be arranged.

FOUR thousand metres is the longest wave-length used in Europe for broadcasting, this being one of the wave-lengths of the Berlin Koenigs-wusterhausen station.



**BRITAIN'S  
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BATTERY**

**THE  
ADICO**

*Will Outlast  
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DOES THIS NAME MEAN ANYTHING TO YOU?

HELLESEN STANDS FOR BETTER RESULTS, LONGER LIFE, AND GREATER EFFICIENCY IN YOUR SET.

Large Stocks Carried by

SOLE N.Z. AGENTS.

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AUCKLAND, WELLINGTON, CHRISTCHURCH, DUNEDIN, AND  
INVERCARGILL.



# Racing "On the Air"

## Enhancing the Popularity of the Sport

THE very successful broadcasting of a running description of the three days' racing carnival at Ellerslie on June 2, 4, and 6, is the reason for this reference to the effect of broadcasting on sport generally, and particularly so far as racing is concerned. There have, up to recently, been mixed views on how much sport, the clubs, and the public benefit from broadcast descriptions, but opinion seems to have definitely swung round to the view that the more publicity any sport gets the better it is for all concerned. It has been clearly demonstrated in respect to boxing and football that broadcast descriptions—the more graphic they are the better—foster interest in the events. Such being the case, the sporting club must benefit.

UNDOUBTEDLY the main factor exercising the minds of those in control of racing is "Does broadcasting affect attendances?" In this respect there is no evidence, as far as we know, that the broadcasting of race meetings, or in fact the broadcast of any sporting event, is detrimental to the attendance. On the contrary, there are many concrete instances to show that broadcasting tends directly to increase interest, and indirectly the patronage. To the best of our knowledge, no country outside New Zealand has revoked permission to broadcast any sport.

SPORT and sporting clubs hold their prestige through the goodwill of the public, and there is no better means of fostering that goodwill—and promoting goodwill where it does not at present exist, which it does not among certain sections of the public—than by publicity, by the telling of the public all about the sport in question and increasing their interest. All sport welcomes unlimited publicity—such publicity as is given by radio broadcast descriptions.

THERE are many thousands who have never yet been on a race-course who listen to the meetings with the greatest pleasure—this is proved by reports received—and whose goodwill is automatically being fostered continually.

IT is significant that to date the Broadcasting Company has not received one adverse report in respect to the broadcasting of its racing relays. In fact, the public hears through the loudspeaker nothing prejudicial to racing, but is entertained with a description of the pretty surroundings, regaled with band music at various intervals, and thrilled, just as the actual spectators are, with the exciting finish of a race. It would appear, therefore, that this form of entertainment must please, and that the racing authorities secure a great amount of goodwill from people who have not hitherto been sympathetic towards the sport, and who would continue to be unsympathetic were it not for the entertainment enjoyed through the medium of broadcasting.

THE ultimate effect of this new stay-at-home interest in racing must result in lessening any hostility towards this form of sport, and it would seem that opposition to the broadcasting of race meetings should come from those opposed to such forms of sport instead of from those fostering such.

IT is well known that a great deal of the opposition by the clubs comes from the fact that broadcasting is being made use of by a section of the community termed "bookmakers." This is undoubtedly true, but the question is, should all sections of the community be penalised because of these few law-breakers. It can also be shown that too much is made of this fact, because it is perfectly well known that the bookmakers have their own organisation for the forwarding of information relative to racing, and this is continued despite broadcasting.

IF a bookmaker has a radio receiver with which he can hear Auckland in Dunedin or Christchurch; or Dunedin in Auckland, and the four stations are on the air every race day, then the bookmaker has a service which will supply him with fifty-two days' racing, while his contemporary under his independently organised method receives information concerning 242 days; and 37 days' trotting could be broadcast out of 78. The bookmaker sees to it that he gets his information independently of any broadcasting.

BROADCASTING is a means of disseminating news promptly and efficiently to large numbers, frequently giving immediate information which in many cases would not reach out-back settlers for days. This is a service to the community, and it is claimed that this entitles the company to the same privileges as extended to the Press at any fixture. The company renders its service gratis to the club, requires very little provision in the way of stand reservation and accommodation, and bears the whole cost of the installation and carrying out the relay.

**THERE ARE NO BETTER VALVES THAN THESE "MINIWATTS"—EVERYONE WILL TELL YOU.**



—and it is only a matter of time when YOU, TOO, will say this without the slightest hesitation. Remember, if you can't replace all your valves at once with Philips "Miniwatts," do so one by one. There is no need to make any alteration to your set and you will appreciate the difference in both tone and volume.

**SOLD EVERYWHERE.**

SIX VOLT SERIES	FOUR VOLT SERIES
A609 Gen. Purpose 13/6	A409 Gen. Purpose 13/6
A630 Res. Cap., H.F. 13/6	A415 Det. 1st Audio 17/6
A615 Det. 1st Audio 17/6	A425 Res. Cap., H.F. 13/6
B605 Audio (L. Spr.) 13/6	B405 Audio 13/6
C603 Super Power 15/6	B403 Super Power 15/6
	B409 High Gain Pwr. 15/6
	B405 Super Power 20/6

## SPORTING

### NEXT WEEK'S FIXTURES

Saturday, June 16.

#### RUGBY.

Eden Park	.. .. .	1YA
Athletic Park	.. .. .	2YA
Lancaster Park	.. .. .	3YA
Carisbrook	.. .. .	4YA

## THE MAJESTIC ORCHESTRA

MR. JOHN WHITEFORD-WAUGH

THE Auckland Majestic Theatre orchestra, with Mr. J. Whiteford-Waugh as musical director, is considered by picture public and radio fans alike, to be New Zealand's finest picture house combination. Mr. Waugh is a musician of the highest ability, and has had years of international experience. He was born in Newcastle, Australia, of Scottish parentage. While still a boy he showed considerable musical talent, and studied the violin from S. Vost Janssen, the celebrated German teacher, the piano under Dr. Tyrrell, and harmony and composition from George Young, organist at St. Andrew's Cathedral, Newcastle. These were, undoubtedly, some of the leading teachers in Australia.



In 1914 Mr. Waugh entered the Sydney Conservatorium to continue his musical education, and played the violin for Henri Verbrugghen, who immediately offered him a position in his orchestra. So impressed was Verbrugghen by Mr. Waugh's talented playing that he accorded him the honour of attending all his interpretation classes free of charge. In 1918 Mr. Waugh left the Sydney Conservatorium and went on tour as solo violinist with Monsieur Goossens, the famous Belgian baritone. In 1921 he joined J. C. Williamson as orchestral lead and deputy-conductor.

Mr. Waugh carries with him a charming personality, and has all sorts of wonderful ideas to make the musical programme at the Majestic one of its most attractive features. All who hear the regular Tuesday relay broadcast from IYA agree that the magnificent musical programmes he has provided from the Majestic during the past twelve months are a reflection of the ideals of this popular and capable conductor. As is befitting the largest theatre orchestra in New Zealand, the Majestic also possesses the most comprehensive music library. This library, which is the sole property of Mr. Waugh, contains over 10,000 orchestral numbers, and is constantly being increased. New publications are added as soon as they appear in print. The library contains 400 overtures, many of which are impossible to duplicate. It is possible, therefore, to play a different overture every week for nearly eight years. Besides the overtures there are also, of course, orchestral suites, light and grand operatic selections, individual short orchestral numbers, marches, waltzes, ancient and modern dance numbers, and—oh, almost anything and everything you can think of that has ever been written.

But just as interesting, possibly, as the library itself, is the organisation of this musical beehive under a keen librarian, Mr. Rex Wills. There is the classification of all this music under waltz, gavotte, love themes, storm music, etc., and under an alphabetical index. As a result of this system the librarian becomes a detective who, if given only one clue to the piece of music wanted, can immediately ferret out the correct number and bring it triumphantly to you.

## NEW PHILIPS TRICKLE CHARGER

The new Philips "A" battery trickle charger, which has just arrived, passes from 200 to 150 milliamperes into from 1 to 3 cells, and is thus serviceable for any of the standard multi-valve sets. An outstanding feature of the device is its exceptional compactness; it could be easily carried in an overcoat pocket. There is a diminutive rectifying Philips long-life valve which fits into a socket inside the charger. The charger could be hung on the wall, as two slots are provided for hooks. The device is retailed at £3 10s.

# Honorary Official Listeners

## Opportunity for Radio Enthusiasts

IN the course of an official statement dealing with the scheme recently outlined in the "Radio Record" providing for the appointment of "honorary official listeners," and the arranging of a network of "listening posts" throughout New Zealand, Mr. A. R. Harris, General Manager of the Broadcasting Company, provides further interesting details of the proposal.

The first announcement of the scheme produced a gratifying response, numerous applications for appointment being received from enthusiastic listeners who offered their services to aid broadcasting in New Zealand.

The final selections have not yet been made, for it is anticipated that, now the scheme is practically finalised and about to be put into operation, many others will be anxious for appointment as official listeners, and the Broadcasting Company is naturally desirous of making the best selection possible.

All who now apply are asked to state their experience in radio work as well as the quality of their receiving sets.

MR. A. R. HARRIS states:—

"In dealing with the relations existing between itself and the public, the Broadcasting Company has had to consider three outstanding factors.

1. Public utility of programmes.
2. Improved facilities for reception.
3. Effectiveness of transmissions at the point of reception.

"The first of these factors is being dealt with by the establishment of public relations committees, acting in an advisory capacity to the company with regard to church services, children's sessions, music and dramatic arts. Improved facilities for reception can only be dealt with by local organisations such as Listeners' Leagues or Radio Societies. The third factor, namely, effectiveness of transmission at the point of reception, is a matter on which much valuable assistance may be rendered the company by enthusiastic radio amateurs throughout the Dominion. It is the desire of the company to secure co-operation in connection with this third factor.

### Quality of Transmissions.

"AS listeners are aware, the company has erected modern transmitting stations, up-to-date in every particular, and equipped with the most efficient broadcasting plants procurable. A competent staff has, moreover, been organised to deal with the company's engineering problems, and it is able to check and control transmissions up to the point of their output from the aerial. Measurements of the field strength of signals have been taken, and are being taken within a limited radius. It is not practicable, however, for the company, on its own account, to make tests of the effectiveness of transmissions at all localities in the Dominion, at all times.

"The information which the company wishes to secure can only be obtained from reports furnished from the various localities. To date, it is indebted to many listeners for reports, but the value of these has been lessened by reason of their irregular nature, and the company now seeks co-operation for the purpose of making these reports systematic and more comprehensive.

### Effect of Adjustments.

"OCCASIONALLY adjustments are made to the equipment of a transmitting station or studio. In some cases these adjustments affect only the internal working of the station, in others they may affect transmission as they are received by the listener. From time to time, too, special test transmissions are broadcast for various reasons.

"Reports on reception are received by the company from various sources. Sometimes these reports are in the nature of complaints. The poor quality of reception may be due to many causes, more than likely to inefficient receiving apparatus or unskilled operation. At any rate, such reports need investigation. Then again, the company receives communications re-

porting interference from other transmitting stations or ships. All these are matters which the company proposes to deal with by the appointment of 'honorary official listeners' to the company."

### Honorary Official Listeners.

"LET it be understood at this juncture that the company's one and only object in inaugurating this scheme of 'honorary official listeners' is that of improving its service to the listener-in. Every 'honorary official listener' will have the opportunity of assisting the company in this object. The company realises that to achieve its object it must enlist the services of reliable amateurs, and make them its accredited representatives throughout the Dominion. It must, moreover, furnish these representatives as necessary with information as to test transmissions, adjustments to transmitting apparatus, local complaints regarding reception and interference, and other information relevant to the discharge of their office. This it proposes to do.

"To each 'honorary official listener' appointed by the company there will be issued a certificate of appointment and an official badge. Appointments will be for one year, expiring on March 31. The receiving stations of 'honorary official listeners' will be recognised by the company as 'official listening posts.' These listening posts will be situated in the following localities and will be added to as necessity arises:—

### NORTH ISLAND.

North Auckland, Auckland City, Bay of Plenty, Poverty Bay, Hawke's Bay, Wairarapa, New Plymouth, Wanganui, Palmerston North, Wellington City.

### SOUTH ISLAND.

Blenheim, Nelson, Westport, Hokitika, Central Canterbury, Christchurch City, South Canterbury, Dunedin City, Central Otago, Southland. "Duties will embrace the following:—

- (a) The supplying to the company from time to time of reliable information regarding reception of its transmission in your locality.
- (b) The reporting to the company on special test transmissions.
- (c) The investigation of local reports concerning the reception of transmissions.
- (d) The investigation of local reports of interference of other transmission from stations and ships.

"WHEN forwarding reports of reception, 'official listeners' should include a report of the local meteorological conditions and any other factors which may affect reception. There is no doubt that reliable information on the matters mentioned in this letter from throughout the Dominion will be of the greatest value to the broadcasting service."

## BRANDES "ELLIPTICON" LOUDSPEAKER.

One of the best values in loudspeakers on the New Zealand market is Brandes "Ellipticon," a new cone of a novel oval shape housed in an English walnut cabinet. The sound-box is specially designed to give all the advantages of both cone and horn reproduction. The cone being oval it has no natural resonance frequencies of its

own. The unit which vibrates the cone is exceptionally large, the magnets being actuated on the "push-pull" principle, giving an abnormal clearness which affords greater amplitude of vibration, and obviates the risk of rattle or "chatter" when strong impulses are created. The tone is of outstanding depth and most natural. At the price, £6 10s., the "Ellipticon" is certainly a bargain as offered by the International Radio Co., Ford Building, Courtenay Place, Wellington.

## 'Repeat' Coupon

Address: 2YA/6, Radio Record, P.O. Box 1632, Wellington.

I desire to nominate the following items for "repeats" next week:—

Monday (Classic) .....  
 Tuesday (Operatic) .....  
 Friday (Popular) .....  
 Saturday (Vaudeville) .....

Signed .....

Votes may be recorded for one or for all of the nights mentioned. This selection is made at mid-day for the evening affected. Voting papers receivable till noon. Distant listeners may send forward their Monday's and Tuesday's votes if desired, in order to be in time, and follow later with Friday's and Saturday's wishes. The coupon is inserted for convenience, and may be supplemented in writing.

# From the Woman's Point of View.

By VERITY.

## TO-DAY AND TO-MORROW

### The Latest Novelty.

THE latest novelty on British and French receivers is a small, neatly-constructed clock, which can be let into the panel of the receiver in the same way as a meter, or the "peep holes" often used to ensure that valves are afloat. With the correct time on the receiver, one can always turn it on at the proper time to hear an item desired. In fact, the automatic switch clock, which turns the set on at any desired time, is also being adapted for panel mounting, and indications are that it is likely to become popular. Another interesting novelty which is being developed is a time chart clock, which enables the listener to compare his own time with that in any part of the world. Such apparatus is likely to be fairly popular in Europe and America, where there are many different stations working in different time zones, but at present Australian listeners hear too few foreign stations for a time chart of this sort to be a really useful adjunct to the receiver.

### Britain First Again.

WIRELESS installation work has been developed more in Great Britain than in any other country. There, it is quite a common practice to install the receiver in one part of the house, generally somewhere out of sight, and to provide a system of wiring, similar to wiring for electric bells, to connect it to several different rooms. The wiring in each room is terminated in an unobtrusive wall plug, into which the loudspeaker can readily be plugged. Very fine fittings have been made for this purpose. The latest adjunct to this installation system is remote-control switching apparatus, which enables the receiver in one room to be turned on or off from another room, saving the owner the trouble of leaving the room in which the loudspeaker is working. The use of this wiring system has many advantages, and it is surprising that it has not been used more widely in Australia. In a great many of the older houses the wiring installation provided for electric bells which are now seldom used can be employed for the distribution of broadcast music.

### Expensive Japan.

THE monthly minimum expense for a foreigner living alone averages about 200 dollars (£40), and this assumes that he either takes advantage of mess accommodation or lives at a less pretentious residential hotel. A couple maintaining a home must assume a monthly expense of at least 300 dollars (£60) for household expenses, with a minimum of 400 dollars (£80) for all necessary expenses. (Add about one-fourth more for each child under eight years.) From this it will be seen that a married couple with, say, three small children, requires an income of close on £1700 a year to live properly in Japan. More, of course, is required if they are not prepared to live economically.

It is stated that it costs more for a foreigner to live in Tokyo than anywhere else in the Far East, and the "Japan Advertiser," the leading American paper in Japan, in commenting recently on this assertion, added somewhat plaintively, "We know it costs more than anywhere in the United States."

### Fashionable Monsters.

THE craze for boudoir toys must have its fashions, like everything else.

One must be absolutely prehistoric to be thoroughly up to date.

The spindle-legged pierrots and other dolls that have reigned over settees so long are giving way to small reproductions of such horrific creatures as the plesiosaurus!

It is hardly pleasant to picture an enthusiast's room!

### Ingenious Fashion.

THERE is no end to the ingenuities of fashion. The latest novelty in Paris is the knee-bracelet made of woven gold or platinum and set with precious stones. Perhaps these ornaments will later on be transferred to what the doctors call the upper extremities, and will then be known as wrist-garters. One might even speak of gloves as hand-socks or hats as head-shoes, which would be another pleasing novelty.

### A Poultry Roasting Secret.

WHEN roasting a chicken or any other bird place it in the baking dish breast down. This will prevent the breast being dried up, which so often happens. This is unknown to many people.

### Fair Hair Vogue.

THE very latest hats are very small and follow the shape of the head closely. Black is used a good deal, especially in conjunction with a coat or costume in pale colours. A striking ensemble seen recently on the terraces of Monte Carlo was a pale rose-beige coat with upstanding collar of beige fur. Under this was worn an angora wool sweater of exactly the same tone and a pleated crepe de chine skirt; a small, tight-fitting black hat and black patent shoes completed the toilette and gave character to the ensemble, as well as showing up the golden hair and fair skin of the wearer. Blonde women, by the way, are becoming increasingly popular, and many mannequins in the famous couturiers have fair hair, not always shingled now, but done into a small roll on the nape of the neck.

### The New Cards.

THE new black playing cards, with white pips for diamonds, yellow for spades, red for hearts, and green for clubs, may be more picturesque than the old-fashioned kind; but one can hear the indignant snort of the experienced player when he is asked if the new colour scheme is likely to be of any assistance to him in the way of preventing revokes.

Of course, there are others; but the player who is capable of mistaking a spade for a club or a heart for a diamond is hardly to be reckoned as a player at all.

There is a story of a bridge maniac who received a telegram while playing at his club. He excused himself, read it, and remarked, "By Jove, my poor old governor's dead." Then, with a barely perceptible pause, "Two hearts."

"Well," remarked one of the other players in a shocked voice, "I think you might have had the decency to call a black suit!"

## "THE BETTER WAY" COMPETITION No. 2. MONTHLY PRIZES FOR HOME-MAKERS

ALL women whose homes are to them a source of abiding interest and delight, have their own treasured secrets of housekeeping. It may be an unusual recipe, a scheme for brightening an uninteresting room, a labour-saving notion, an idea for decorative work, a dress or toilet hint, or a pet economy. There is always a special method of performing various household tasks—the "better way." The "Radio Record" offers a prize of half-a-guinea each month until further notice for "Better Ways" from our women readers. The right is reserved to publish any entry not awarded a prize on payment of a fee of 2/6.

Entries must be written in ink, on ONE side of the paper only, and the name and address of the competitor should be written on the back of each entry.

When more than one "Better Way" is submitted by the same competitor, each entry must be written on a separate sheet of paper.

The decision of the Editor is final and binding. A non-de-plume may be used if desired.

The June "Better Way" Competition closes on June 11, and the result will be announced on the women's page on Friday, June 15.

All entries to be addressed: "Verity," c/o "Radio Record," Box 1032, Wellington.

## The Letters of Annabel Lee

MY dear Elisabeth: Many people are sad because of the death of an eminent jurist, who won so notable a place in the world of affairs and in the affection of his fellow-men. With an extensive knowledge of humanity in all its varying aspects, a catholicity of taste in literature, tolerant balanced vision coupled with an able and gracious personality, Sir John Hosking held the love of his wide coterie of friends and the regard and confidence of the wider community beyond.

ANOTHER great figure in the life and literature of the British Colonies, though not of this Dominion, also has lately passed from this world to the next. The eldest of the witty and well-known Fitchett trio of brothers, each extremely brilliant in words and works, he was an inspiring preacher in his own Australia, a scintillating litterateur, and as scholar and thinker won high honour and recognition in many fields of achievement. We, so far from the Homeland, may well take pride in prestige conferred on these islands by such names on the roll of our country.

FEW and short the Moiseiwitsch concerts, but very pleasant the season, when it was possible to drop in at the Town Hall at the tired end of the skirling day, and for a space steep our souls in music that made one dream dreams, through the spell cast by this pianist, whose aloof personality is strangely at variance with interpretative fire. Many ancient classics he gave us, something also of modern composers: "The Little White Donkey," a tripping, champing, galloping measure being much to the conglomerate taste, and the challenging, clanging "Rush Hour at Hong-Kong" very interesting, and approximating in sound to those exciting blobs of paint so characteristic of the younger school of painting. We were eventually lulled by "Liebe-

straume" into acquiescence with the waywardness of the world, and next morning attacked life with fresh zest like giants refreshed "in quite a nice way," as one dear acquaintance explanatorily refers to her son's uncanny appeal to all sorts and conditions of females.

THE Return of the Beloved to a world from which he has been snatched by death holds signal fascination to many minds, as witnessed by held breath and clasped hands at silly seances, pathetic and futile for the most part, where paltry, demi-semi revelations of doubtfully spiritual origin are listened to by the faithful. "Thunder in the Air," a play now running in London, treats of the come-back of a young soldier who perished in the Great War, after being disgraced for misdemeanour, and its reactions upon those who held him dear. To his mother he seemed again the joyous laddie of childish days; to the girl he jilted, bitter after-days forgotten, he was again careless, debonair lover and loved; to the parson whose wife he seduced, a waster and a rotter; and his father found him an unshriven shatterer of high hopes and disgrace to his name. All human and interesting; but Barrie has set so high a standard that others are apt to fall short; uniting with his sure and tender touch an intuitive clarity of vision that brings an element of wishful hope to those who send long thoughts to the Unknown Land of heart's desire.

SUBMERGED in the doubt and distraction of moving in to new quarters, immersed in domesticity have I been for the past seven days, contriving to turn cheap and nasty rooms into surroundings that attain a similitude of atmosphere and colour. Some jugglery is required for this, but after obduracy of gas cooker to do more than feebly flicker, refusal of electric light to do even as

much, leaving myself in darkness for one long night, gruesome discovery of a ceiling that leaks and disreputable cat with penchant for brightest and best cushions, at this long last I begin to see daylight. Literally, for I find myself for the moment in a room with a view, and can, without effort, watch the sun rise daily, which is a pleasant beginning of the day. Of what a blank ugliness, by the way, are houses which offer reluctant hospitality, for a consideration, to hundreds of women workers. What a halo would sparkle around the head of some wise man who invested superfluous shakels in skyscraper service flat. This kindly pillar of prosperity, I am convinced, would get good interest on his outlay; besides being bepeDESTALLED and enshrined by plucky pilgrims who meantime laboriously seek elusive bourne.

MISS Helen Gardner, graceful and gifted entertainer, returns to our shores, and once more we welcome her vivacious talent, which, it is interesting to hear, was appreciated by so good and great a judge as the British Broadcasting Association. Recently I met her with a Dunedin amateur tragedienne, and felt hopeful that soon we shall have some more of those delightful shows formerly organised for the artistic public by these two clever New Zealand girls. Both have travelled much in far fields of the wider world, and obviously found much to say to each other. It would seem that, however far one goes roaming in the gloaming, 'tis the light of home that calls at last, a place in the sun that shines on the old trail, and

The men that were boys when  
I was a boy  
Walking along with me.

Your

ANNABEL LEE.

## WOMAN AND HER HOME

### How to Preserve Cut Flowers.

AN easy and most successful method of preserving cut flowers, ferns, small branches of berried shrubs, grasses, etc., for indoor decoration in vases is to paint or dip them after gathering in weak gum water—one ounce of gum arabic dissolved in 1½ pints boiling water, strained and used lukewarm. Before treatment place flowers, etc., in warm room for thirty minutes to dispel adhering moisture. After painting (dip well if dipped) hang in a cool place until quite dry. The gum forms a fine protective and invisible coating on the blooms, etc., which preserves their shape and colour indefinitely.

### Preserved Rhubarb.

CUT rhubarb into pieces one inch in length, and to 1lb. rhubarb add 1lb. sugar. Put into a large bowl and allow to stand 24 hours. To 12lb. rhubarb add grated rind and juice of 6 lemons, 3lb. cooking figs, and 2lb. more sugar. Let the preserve boil for 1½ hours, taking care to remove all scum, so that the jam may be transparent.—Miss Marion Christian, 2YA.

### Salmon With Tomatoes.

ONE tin salmon, 3 tomatoes, 1 onion, pepper and salt, 1 tablespoon water, 2 tablespoons breadcrumbs. Method: Peel and slice the onion and fry it in dripping or butter until it is brown. Dip the tomatoes into boiling water and then remove the skins. Turn the salmon from the tin into a pie-dish. Put a layer of onion, then tomatoes sliced, and then the salmon. Repeat this, leaving a few tomato slices for the top. Pour over the water and cover with breadcrumbs. Bake in a moderate oven for 10 minutes.—Miss Marion Christian, 2YA.

### Teaching Children Tidiness.

WHERE there are several small children in one household it often takes a long time to distinguish caps, gloves, stockings, shoes, etc., especially if the children are dressed alike. Instead of using names or letters for marking, use colours. Let one child take red: red braid for coat loop; a red line round inside edge of gloves, or on underclothing; red wall pocket for slippers, etc.; red painted hat peg; red ink mark inside shoes. The next child takes blue or green for everything.

### A Sure Test.

MANY people are afraid of tinned foods, especially fish. Here is a sure way to test the contents. Before opening remove all the paper, coloured or otherwise, then submerge the tin in a pan of cold water. When the water has settled watch it carefully for a few minutes. If the water remains untroubled all is well, but if bubbles appear the food is not fit for consumption.

### A Tasty Dish.

FROM a large Spanish onion scoop out sufficient from the centre to insert a kidney. Put it into a small dripping-pan with half a teaspoonful of cold water. Place the tin in a moderate oven, and bake until the onion is soft, when the kidney will be found to be cooked also. Serve very hot on toast.

### To Save Frequent Washing of a Floor Mop.

SLIP over the mop a sleeve from an old flannel shirt, or similar material, drawn up at one end, leaving just enough room for the handle to pass through. The mop works just as well with its cover on, and this can be slipped off and washed with the greatest ease. Thus the mop, though doing its work, is kept quite clean.

### Mint Jelly.

TAKE ½ pint white vinegar, 1 pint water, 1lb. loaf sugar, 1oz. leaf gelatine, and a large handful of mint. Put the vinegar in a saucepan, add the mint, boil gently for 30 minutes, then add sugar, dissolve the gelatine in the water, and add to the vinegar; mix together and strain (if liked a few drops of green colouring may be added). Put into small jars and when cool cover closely.

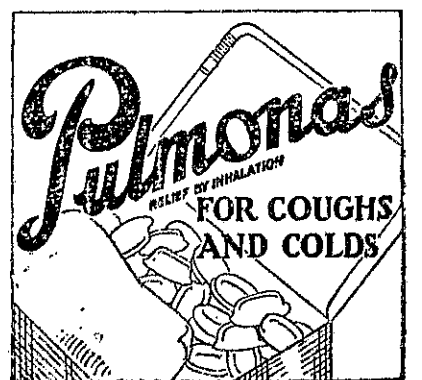
Used instead of mint sauce, it will be found most convenient, especially when one is unable to procure fresh mint.

### Emergency Fish Paste.

BOIL an egg hard. While still warm take out the yolk. Mix with this a piece of butter about the same size as the yolk of the egg. Add to it essence of anchovy, according to taste. This makes a dainty fish paste for sandwiches sufficient for two persons. Any quantity of paste to suit requirements can be made, of course, using similar proportions.

### To Improve Broiled Kidneys.

BROILED kidneys are frequently sent to table tough and leathery. This can be avoided by soaking the kidneys in salt water for some hours before using. When cooked they will be tender, delicious, and easily digested. This hint was given me by an old colonel who appreciated good cooking.



### S-O-S

TRAVEL IN COMFORT BY CAR

WELLINGTON — PALMERSTON NEW PLYMOUTH.

Use Our Booking Offices in Advance.  
51 Willis Street, WELLINGTON.

**Tonking's Linseed Emulsion**  
is a Certain Cure for Coughs and Colds

### To Sweeten Thermos Flasks.

TO prevent thermos flasks smelling musty after being shut up, always well wash and drain, then put in a lump of sugar before corking. A fresh lump should be used each time.

### Grey Kid Gloves.

Gloves this season are unobtrusive, made of practical materials, and, above all, very reasonably priced. Washing nappa, the newest material, is a better investment than washing suede. Washing suede tears easily after being washed. All the new styles have pretty, turn-back cuffs; some are embroidered, and some have patched holes to show a contrasting colour beneath. Kid seems to be the most popular material, especially in a pretty shade of beige. The smart Parisienne is ever faithful to kid gloves, and this season she is wearing elephant grey kid with all her dark street suits.

### To Cure Warts.

THE following is a perfect cure for warts, even of the largest, without leaving any scar, and has been tried with success in my own family.

Take a small piece of raw beef, steep it all night in vinegar; cut as much from it as will cover the wart. Tie it on it, or fasten with strips of sticking plaster. It may be removed in the day and put on every night. In two weeks the wart will die and peel off. The same prescription will cure corns.



# Some Features of Next Week's Programmes

## "MERRIE ENGLAND" AT 1YA

EXCERPTS from German's "Merrie England," the story of which is laid in the glorious days of Queen Elizabeth, will be sung by the Madame Irene Ainsley Quartet on Tuesday evening. Madame Ainsley will take the dual part of Queen Elizabeth and "Jill-all-alone." Mrs. J. Parry will be Bessie, Mr. Walter Brough the Earl of Essex, and Mr. Robert Peter will be Sir Walter Raleigh. With such a strong cast "Merrie England" by radio should be most enjoyable.

The remaining portion of the programme will consist of miscellaneous items by the same vocalists, with relays of orchestral music from the Majestic. Special interest will attach to the flute solos of Mr. J. Lemmon.

"A Man of War Without Guns" is the title of Mr. Chappell's next talk in his "Old New Zealand" series.

WEDNESDAY'S concert will consist of a relay of the entertainment provided by the Auckland Municipal Band, under Mr. Christopher Smith. Vocal items from the studio will be given by the Hazell-Sutherland Duo.

A FEATURE of Thursday's programme at 1YA will be Lohr's beautiful song cycle, "The Little Sun-bonnet," comprising many charming solos and part songs. The vocalists will be the St. Andrew's Quartet.

Very enjoyable, too, will be the broadcast of the evening's programme, for the contributing artists will be the Snappy Three in popular songs, the Auckland Trio with their instrumental items, the Griffiths Duo in two humorous sketches, Mr. Cyril Towsey (piano), Mr. J. O'Kane (mandolin), and Mr. A. McElwain in some more humour.

THE varied nature of Friday evening's entertainment will make a universal appeal. Besides an excellent vocal and instrumental musical programme there will be another of the amusing radio productions by the Auckland Comedy Players under Mr. J. F. Montague's direction. This time the play will be Sheridan's famous "School for Scandal," which was first produced in 1777, 150 years ago, and whose popularity is as great now as ever. Mr. Montague will take the part of Sir Peter Teazle, Miss Melzie Johnston that of Lady Teazle, and Mr. Hellyer the role of the servant.

Another feature of this programme will be a humorous song cycle presented by Madame Mary Towsey and Mr. John Bree. It concerns four cautionary tales and a moral.

Also on this programme will appear Miss Molly Wright, the talented cellist of the Auckland Trio. Miss Wright will play "Tarantelle." The Trio will play a budget of popular music. The latest popular songs will be played by the International Instrumental Quartet.

A novelty turn for the evening will be the appearance of The Wizard, whose "Word Wangles" will create great interest among listeners.

SATURDAY evening's programme will consist of a relay of the choir and organ selections given at the concert of the Auckland Municipal Choir under Mr. Maughan Barnett. At 9.30 will follow a dance relay from Dixieland Cabaret.

VIOLET ray machines are among the worst producers of static. Generally a vibrator in the apparatus is the cause of the annoyance. If any one desires to use a violet ray outfit and listen to radio at the same time he may eliminate the noise by hooking a tapped condenser between the input terminals of the machine and grounding the centre tap.

## Fine Band Item for Thursday at 2YA

THE instrumental music on Thursday evening will be supplied by the Salvation Army Band, who will present, among other sparkling numbers, the selection "The Wanderer." This is a descriptive composition representing the Biblical story of the Prodigal Son. The part of the Prodigal is taken by the solo cornet, and that of the father by the trombone. Note the difference between the arrogant, imperious style of the son and the tender pleading tones of the father.

IN Part 1, the opening conveys the peaceful and calm atmosphere of the home. A beautiful legato melody is allotted to the euphonium, the soprano cornet playing a tripping movement suggestive of the singing of a bird. The next movement portrays the prodigal, tired of the restraint of home life, demanding his freedom and asking for the portion that falls to him prior to leaving for a far country. Almost immediately the father's pleading voice is heard, urging the son to stay, the last few bars of the movement depicting his last entreaty. The son closes his ears to the paternal pleading, and leaves home in a spirit of careless gaiety. The music gradually fades away here to treble piano.

IN Part 2, in place of anticipated pleasures, the wanderer experiences the sorrows of the far country. The music is now melancholy, bordering at times upon desperation and violence. In his agitation he hears the call (given by cornets and trombones), "Come Home, Come Home."

PART 3 opens with a suggestion of joy-bells, the conclusion also depicting the weary, halting steps of the returning wanderer. Thus encouraged, he hurries on, meets his father, confesses his wrongdoing, and seeks forgiveness, the fatherly greeting being given out by the trombone. A duet by cornet and trombone, representing the reconciliation, is followed by "Home, Sweet Home." The closing movements are of a jubilant nature, the last bars being marked by a joyous note of triumph.

## 2YA NOTES

ON Monday, June 11, the Ariel Singers will present "Fifteen Minutes of Old Irish Music," which should make a direct appeal to many listeners-in. Conspicuous also are two of Keel's stirring settings of John Macfield's "Salt Water Ballads," one of Roger Quilter's beautiful "Pastoral Songs" (with trio accompaniment), and Granville Bantock's masterly quartet arrangement of "The Cruiskeen Lawn."

In addition, Mr. E. A. Sargent will entertain with humorous songs at the piano, and Mr. Stanley Warwick will be heard in some of his popular elocutionary numbers.

ON Tuesday, the Orpheus Quartet will sing, by request, "Queen of France," a vocal gavotte, "Little Cotton Dolly," a Negro lullaby, and also Mendelssohn's "Farewell to the Forest." Mrs. Alice Harris will sing "Yankee's Song," Mr. Arthur Coe "Lorraine," and Miss Lily Mackie "Row, Burnie, Row." Mr. Len Barnes will sing from classics "The Two Grenadiers" (this has been on the programme previously, but owing to a relay was not sung), "The Monotone" (by Cornelius) and two beautiful songs by Mallison, "Eleanore" and "Violet." With Mrs. Alice Harris, Mr. Barnes will sing the duet from "The Girl Behind the Counter," "Won't You Buy a Spray."

MORE of the Mellow Fellows' nonsense will be filling the air on Thursday. If any listeners-in want to dance on that night, they can do it while "Breeze" is being sung—or otherwise dealt with—by the company, and if the Fellows, who will sing "Phyllis is my only Joy" and "When the House is Asleep," are in good voice on that occasion, those who like more "high-brow" entertainment will enjoy it here. The stories and dialogue are up to the usual standard, and none of them is true. The evergreen "Somerset" song is in the hands of the Basest Fellow, who has made it a life study, and "Kentucky Home," in harmonised version, will prove a fitting conclusion to a good night's entertainment.

Miss Marjorie Cadman will contribute to the programme, and Mr. Johannes Andersen will be heard in one of his entertaining lectures.

THE Apollo Singers have arranged a well-varied programme for the evening of Friday. Their bill of fare includes two melodious quartets, "The Old Folks at Home" (by Cornwall), and "Drink to me only" (by Roger Quilter). Miss Chudley is to sing "A Prayer" and Quilter's delightful song, "Now Sleeps the Crimson Petal."

while "The Life of a Rose," by Lehmann, is the number chosen by Miss Goodwell. Miss Chudley will also be associated with Mr. S. E. Rodger in Mendelssohn's beautiful duet, "Autumn." The male soloists, Mr. Rodger and Mr. E. W. Robbins, will sing respectively "The Song of the Waggoner" and "Ships of Arcady." Mr. Cedric Gardner, a popular humorist, and Palmer's Hawaiian Trio will contribute towards the evening's entertainment.

ON Saturday the Melodie Four will sing three concerted numbers. "The Dear Little Shamrock" (arranged by Dukes) is a tuneful arrangement of the well-known Irish air. In "The Old Folks at Home" many original touches are introduced and harmonious effects obtained. "A Vocal Combat," which is a novelty item, is connected with two of the solo numbers, which will be presented by members of the quartet. Mr. George Titchener, humorist, Mr. Lad Haywood with his Italian mandolin, and the Glad Idlers will contribute to the evening's entertainment.

## 3YA NOTES

SOME artists not heard from 3YA for some time will appear on Monday evening, co-operating with Derby's Military Band in a very bright entertainment. The new vocalists will be Miss Eileen Irwin, the possessor of a sweet contralto voice, and Mr. Eric Joyce (baritone). Two other vocalists will be Miss Hilda Hutt (soprano), and the always popular Mr. T. G. Rogers. One of Miss Hutt's songs will be Tosti's "Goodbye," and those of Mr. Rogers will be "Myfanwy," "Roses of Picardy," and "Good Company." A soprano and tenor duet, "A Night in Venice," will be sung by Miss Hilda Hutt and Mr. Rogers. Elocutionary items will be given by Mr. Hiram Dunford.

THERE will be an excellent miscellaneous programme on Wednesday evening, contributed by a wide variety of artists. Miss Nellie Lowe will be heard in such solos as "My Ships," "The Dream Canoe," and "If I Might Come to You," while with Mr. Fred C. Penfold, the duet, "Grey Days," will be sung. Mr. Penfold's solo items will be "The Lute Player," "Son of Mine," and "Homeland." Another vocalist will be Miss Hilda Blechhynden (mezzo-soprano), well-known on the concert platform in Wellington.

The humour of Wednesday evening's programme will be provided by Mr. Cheslyn O'Connor, who will sing jazz songs, and Mr. A. H. Todd, who will give humorous recitations, his items being "In 15 Parts," "It Does Go," and "Shell Shock."

INSTRUMENTAL items on Wednesday evening's programme will be given by the Studio Trio, Miss Aileen Warren (pianiste), and Mr. Mal Brunette (clarinet). One of Mr. Brunette's items will imitate the noises in a farmyard.

A NIGHT with German composers will be the nature of the concert programme on Thursday. In turning to Mendelssohn, Beethoven, Schubert, Bach, and others of the same nationality, Madame Gower-Burns has drawn from an inexhaustible reservoir of music, and the items, which the members of her quartet will sing, will be a sheer delight to all. A reference to the published programme, commencing with the beautiful "On Wings of Music" (sung by Mrs. Ann Harper and Mr. Harold Prescott), will show the class of items which will be rendered. Instrumental items by the Studio Trio, Mr. Harold Beck (cello), Messrs. R. Ohlson and Benson (cornetists), Mr. W. Hay (flute), with elocutionary items by that talented young performer, Miss Naare Hooper, are also scheduled.

An interesting section of Thursday's entertainment will be provided by Mr. Percy James, entitled "A Peep Into Coster Land," during which he will present familiar coster songs by Alfred Chevalier, including "My Old Dutch" and "What Cheer." He will give chatty illustrations of these songs, and have some interesting things to say about the coster.

THERE will also be a hilarious comedy sketch by Miss Billie Lorraine and Mr. Percy James, entitled "A Stage Hand's Idea of Hamlet." Two short sketches will also be given by the Two Blue Ducks. This time they will take a trip to India. Mr. T. V. Anson, Dunedin's well-known jazz pianist, will contribute some novelty piano solos, and Mr. E. Heene, a brilliant exponent of the as yet little heard piano-accordion, will give some exhibitions of his skill on this entertaining instrument.

THE first half of Friday night's programme will be popular ballad music. Among the artists contributing will be Miss Dorothy Skinner (contralto), Mr. Neil Black (bass) and Miss Alice Wilson, F.T.C.L. (pianiste). From 9 o'clock on Friday evening dance music by Alf Carey and his Savoy Orchestra will be relayed from the Savoy.

AN interesting entertainment will be broadcast on Saturday evening, during which Miss Irene Hornblow, L.R.A.M., will present some popular ballad songs. Mr. E. Riddle (violinist), Mr. P. J. Palmer (cellist), will also be heard, and in addition there will be some excellent arrangements of instrumental trios for violin, cello and piano. Mr. Tom Cooper (bass), who has a wonderful broadcasting voice, will also be heard on Saturday's programme.

## ADDRESSES FROM 4YA

THE following addresses will be heard from 4YA during next week:—

"The Domestic Uses of Electricity" will be dealt with by Mr. G. J. Butcher at 4 p.m. on Tuesday.

At 7.30 p.m. on Tuesday evening a member of the Otago Tramping Club will give another interesting talk on the Beauties of the Southern City, under the title of "A Walk Around Dunedin."

On Tuesday evening, shortly after 9 o'clock, Pastor W. D. More will delight listeners with another humorous address, entitled "The Ancient Art of Making Sausages." It is not assumed that Pastor More has ever been a butcher, but there are indications that he will have something amusing to say about the little things left over in life.

A fashion talk will be given at 3.15 p.m. on Friday.

Mr. Lloyd W. Ross, M.A., of Otago University, will on Saturday evening at 7.30 give a lecture on "Some Modern Plays." This address will be under the auspices of the Workers' Educational Association.

MORE than 3600 patents have been granted to radio inventors since the invention of radio. Of this total 222 patents have been granted on transmitters, 307 on receivers, 119 on receiver antennae, 375 on special ray and twenty-eight on wave-meters.

RADIO is the supreme test for sopranos or other singers, says Edmond Albion, director of the Washington National Opera. If the voice doesn't go over the air well it's a safe bet it won't go over the footlights, he adds.

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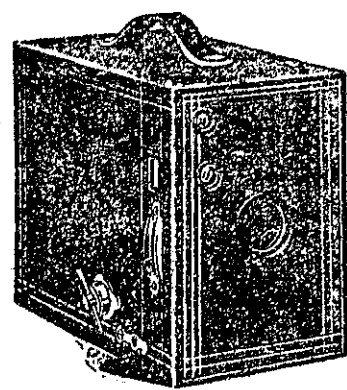
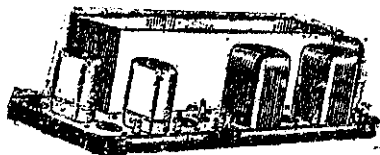
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# Full Programmes for Next

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## NOTES AND COMMENTS

(By "Switch.")

THAT the voices of famous present-day men, transformed into radio waves, are now wandering around the earth and may be picked up a century hence is the startling contention of engineers of the Marconi Company, London. Such waves, they say, never die out completely; with sensitive enough receivers they might be heard in 2025! Already they have heard programmes that have circled the world three times. Commenting on the idea, Dr. Lee de Forest, inventor of the radio valve, said:—"Theoretically the waves exist for ever, as do those of the ocean. The splash made by Noah's ark is still in existence. Radio waves are too weak to be recorded by existing receivers even a few minutes after their emission."

LORD KNUTSFORD'S broadcast appeal on behalf of the London Hospital on February 5 resulted in the receipt of no less than £20,000 from listeners. One subscription was received from Constantza on the Black Sea. An excellent proof of the enormous value of broadcasting, but one shivers to think of the possibilities of the art if it were used for propaganda.

THAT the possibilities in short-wave radio—considered unimportant a few years ago but now commanding interest by leaders in the new science—are far from exhausted is again indicated by discoveries of Abraham Esau, of Jena, Germany, that have resulted in his invention of a method to increase the power of short-wave broadcasting. Esau has discovered that a wire gauze placed on the surface of the earth under the antenna reduces the earth-current losses to a minimum, thus conserving virtually all the energy for radiation and giving greater distance. The network must be three or four times the wavelength being used. Esau provides also for the saturation of the earth beneath the antenna with some chemical agent, the nature of which he does not reveal. This improves the conductivity, he says.

THE chief difficulty which beset those who first tried to operate receivers direct from the alternating current mains was due to the imperfect rectifying and filtering systems used. However, the development of the gaseous conductor valve which operated on the short path principle solved these problems, and the use of these valves, together with specially designed filters and chokes, made possible the dream of the radio engineer and broadcast listener—all electric operation. The first commercially made eliminators suffered from many faults. The transformers and chokes were not designed to withstand the heavy currents which were passing through their windings, with the result that they burnt out. All this has now been overcome, and we have at last the perfect all-electric set.

A FRENCH astronomer, M. F. Baldet, finds evidence that the planet Jupiter, largest in the sun's family, is shooting enormous volcanic bombs into space. Some of the comets and fire balls that sometimes hit the earth may come from Jupiter. Maybe Jupiter is responsible for some of the static we have been having lately.

A GREAT British astronomer, Professor J. H. Jeans, says the sun is ready to collapse at any moment. When it does, the earth will be frozen so cold nobody can live on it.

IT is surprising when one looks around to see the number of broadcast listeners who employ the careless method of leading the aerial through the wall ventilator, or worse still, under the window sash. If one only thinks for a moment one must realise that the principle is wrong. It might do very well in the very dry weather, but what about the wet and damp weather? Some text books tell us that fully 25 per cent. losses occur through carelessly installed lead-in devices.

TWENTY times as many sets as are now being used would be needed to satisfy fully the potential world radio market, according to the estimate of the United States Department of Commerce. The 18,000,000 receiving sets now in use throughout the world serve about 90,000,000 of the earth's inhabitants, or approximately 9 per cent. of the population of existing zones of constant radio reception. If the zones of broadcast service were extended to include the whole world, 350,000,000 sets would be required. So the bugbear of radio "saturation" is still a good many decades in the future.

VERY short waves, i.e., those below about 50 metres, do not travel along the surface of the earth, but are projected into space and reflected by the heaviest layer. For this reason the signals from short-wave stations may not be so strong near to the point of origin as they are at a distance of several hundreds, or even thousands, of miles away.

## Sunday, June 10

1YA AUCKLAND (333 METRES)—SUNDAY, JUNE 10.

- 3 p.m.: Afternoon session—Selected studio items.  
4.0: Literary selection by the Announcer.  
4.8: Selected studio items.  
4.30: Close down.  
6.0: Children's song service conducted by Uncle Leo, assisted by cousins from Dominion Road Methodist Sunday School.  
7.0: Relay of evening service from St. Andrew's Church. Preacher, Rev. Lamb Harvey. Organist, Dr. Neil McDougall.  
8.30: Relay of Auckland Municipal Band Recital from Town Hall (under the conductorship of Mr. Christopher Smith).  
9.30: Close down.

2YA WELLINGTON (420 METRES)—SUNDAY, JUNE 10.

- 11 a.m.: Relay of morning service of the Cambridge Terrace Congregational Church. Preacher, Rev. Thomas Yates; organist and choirmaster, Mr. T. Forsyth.  
3 p.m.: Afternoon session—Selected studio items.  
4.30: Close down.  
6.0: Children's service, conducted by Uncle Ernest, assisted by children from St. James's Presbyterian Church.  
6.55: Relay of evening service from St. Thomas's Anglican Church, Newtown. Preacher, Rev. F. S. Ramson, L.T.I.L. (Vicar of Petone); organist and choirmaster, Mr. Wenzel Collie, L.L.C.M.  
8.15 (approx.): Relay of band recital of the Port Nicholson Silver Band from the Grand Opera House. (Conductor, Mr. J. J. Drew).

3YA CHRISTCHURCH (306 METRES)—SUNDAY, JUNE 10.

- 5.30 p.m.: Children's song service, conducted by Uncle Sam, assisted by scholars from the Tennyson Street Congregational Sunday School.  
6.30: Relay of evening service from Trinity Congregational Church. Preacher, Rev. D. Gardner Miller.  
8.15: Relay of 2YA Wellington (Band Concert by the Port Nicholson Band, from the Grand Opera House, Wellington).  
God Save the King.

4YA DUNEDIN (463 METRES)—SUNDAY, JUNE 10.

- 5.30 p.m.: Children's song service conducted by Big Brother Bill, assisted by the Y.M.C.A. Boys' Division Choir.  
6.30: Relay of service from the Methodist Central Mission. Preacher, Rev. W. Walker. Organist, Mr. Chas. A. Martin.  
8.0: Relay from His Majesty's Theatre of concert by the Kaikorai Band, under the conductorship of Mr. E. Franklin.  
9.15: Close down.

## Monday, June 11

1YA, AUCKLAND (333 METRES), MONDAY, JUNE 11.

SILENT DAY.

2YA, WELLINGTON (420 METRES), MONDAY, JUNE 11.

- 3 p.m.: Chimes of the G.P.O. clock.  
3.1: Selected gramophone items.  
4.30 and 4.55: Sporting results to hand.  
5.0: Close down.  
6.0: Children's hour—Auntie Gwen and Uncle Jeff and pupils of Queen Margaret College, under Mr. L. Barnes. Choruses, duets, puzzles, stories, and greetings.  
7.0: News session, market reports, and sports results.  
7.40: Lecturette—Rev. J. R. Blanchard, "King Kookaburra."  
8.0: Chimes of the G.P.O. clock.  
8.1: Overture—The Orchestra, "Overture in the form of a March" (Meyerbeer).  
8.9: Fifteen minutes of Old Irish vocal music by the Ariel Singers.  
(a) Bass solo, with unison chorus—Mr. J. M. Caldwell and Ariel singers, "Cockles and Mussels."  
(b) Mezzo-contralto solo—Miss Ngaire Coster, "Believe Me, If All Those Endearing Young Charms."  
(c) Tenor solo—Mr. Roy Hill, "My Love's an Arbutus."  
(d) Quartet—Ariel Singers, "The Cruiskeen Lawn."  
8.24: Symphony—The Orchestra, "Military Symphony" (Haydn).  
8.34: Recital—Mr. A. Stanley Warwick, "The Ballad of the Bolivar" (Kipling).  
8.39: Soprano solo—Miss Jeanette Briggs, L.A.B., "Nightingale of June" (Sanderson).

- 8.41: Instrumental trio—Symons-Ellwood-Short Trio, "Trio in G" (Reisiger).  
8.52: Humorous song at the piano—Mr. E. A. Sargent, "Sandy McClusky."  
8.57: Weather report and announcements.  
8.59: Repeat numbers—The Orchestra.  
9.9: Bass solos—Mr. J. M. Caldwell, (a) "Port of Many Ships" and (b) "Trade Winds," from Keel's "Salt Water Ballads."  
9.16: Pianoforte solos—Miss Mavis Torstenson, (a) "Prelude in E Minor" (Mendelssohn); (b) "Ballade in D Minor" (Brahms).  
9.23: Vocal duet—Misses J. Briggs and N. Coster, "I Know a Bank" (Horn).  
9.27: Clarinet solo—"Open Thy Blue Eyes" (Massenet).  
Valse—The Orchestra, "Tout Paris" (Waldteufel).  
9.35: Tenor solos—Mr. Roy Hill, (a) "The Lotus Bloom" (Schumann); (b) "In Summer Fields" (Brahms).  
9.40: Recital—Mr. A. Stanley Warwick, "The Secret of the Machines" (Kipling).  
9.45: Humorous songs at the piano—Mr. E. A. Sargent, (a) "Spring, Glorious Spring" (McGill); (b) "The World Went Very Well, Then" (Spurr).  
9.50: Vocal quartet—Ariel Singers, "Ay Waukin', O" (traditional, arr. Robertson).  
9.54: Ballet music—The Orchestra (Meyerbeer-Kretschmer).

3YA, CHRISTCHURCH (306 METRES), MONDAY, JUNE 11.

- 3 p.m.: Afternoon session—Selected studio items.  
4.25: Sports results.  
4.30: Close down.  
6.0: Children's session—Uncle Jack, bedtime stories, birthday greetings, and songs.  
7.15: News session.  
7.30: Talk on "Esperanto," by Mr. N. M. Bell, M.A., B.D.  
8.0: Chimes. Relay of orchestral music from Strand Picture Theatre Orchestra, under the conductorship of Mr. Harry Ellwood. Studio concert by Derry's Military Band, and assisting artists.  
8.5: March—Band, "Flag Day" (Schramm).  
8.10: Baritone solo—Mr. Eric Joyce, "Fishermen of England," from "The Rebel Maid" (Phillips).  
8.14: Waltz—Band, "Malmaison" (Zulueta).  
8.20: Soprano solos—Miss Hilda Hutt, (a) "Were I a Bird" (Knight and Logan); (b) "Phyllis" (an idyll), (Knight and Logan).  
8.26: Selection—Band, "Chu Chin Chow" (Norton).  
8.38: Tenor solo—Mr. T. G. Rogers, "Myfanwy" (Davies).  
8.42: Fox-trot—Band, "Ain't that a Grand and Glorious Feeling?" (Ager).  
8.47: Contralto solo—Miss Eileen Irwin, "The Harvesters' Night Song" (Power).  
8.51: Recital—Mr. Hiram Dunford, "The Dandy Fifth" (a memory of my military days), (MS.).  
8.57: Weather forecast.  
8.59: Relay of orchestral music from Strand Theatre.  
9.5: Baritone solo—Mr. Eric Joyce, "The Skipper" (Jude).  
9.9: Morceau—Band, "Thistle-down" (Heanessys).  
9.14: Soprano solo—Miss Hilda Hutt, "Good-bye" (Tosti).  
9.18: Cornet solo—Bandman C. Joughin, "That Old-fashioned Mother o' Mine" (Nicholls).  
9.23: Tenor solos—Mr. T. G. Rogers, (a) "Roses of Picardy" (Wood); (b) "Good Company" (Adams).  
9.30: Pot-pourri—Band, "Tangled Tunes" (Ketelby).  
9.40: Contralto solos—Miss Eileen Irwin, (a) "Homing" (Del Riego); (b) "Whatever Is, Is Best" (Lohr).  
9.45: Humorous recital—Mr. Hiram Dunford, "The Alarm" (Anon.).  
9.49: Fox-trot—Band, "Give Me a Night in June" (Friend).  
9.54: Soprano and tenor duet—Miss Hilda Hutt and Mr. T. G. Rogers, "A Night in Venice" (Lacantoni).  
9.58: March—Band, "Roland" (Allison).  
God Save the King.

4YA, DUNEDIN (463 METRES), MONDAY, JUNE 11.

SILENT DAY.

## Tuesday, June 12

1YA, AUCKLAND (333 METRES), TUESDAY, JUNE 12.

- 3 p.m.: Afternoon session—Selected studio items.  
3.30: Lecturette on "Cooking by Electricity," by a representative of Messrs. Turnbull and Jones, Ltd.  
3.45: Selected studio items.  
4.0: Literary selection by the Announcer.  
4.8: Selected studio items.  
4.25: Sports results.  
4.30: Close down.  
6.0: Children's session, conducted by Uncle George. Pianoforte solo, Cousin Joyce, "To the Spring." Violin solo, Cousin Emma, "A Minuet" (Boccherini). Stories for tiny tots. Letters and birthdays. Pianoforte duet, Cousins Joyce and Lois, "Cavalry Parade." Violin solo, Cousin Emma, "Mazurka" (Wieniawski). Pianoforte solo, Cousin Lois, "Country Dance" (Beethoven). Story-time.  
7.15: News and market reports.  
8.0: Chimes.  
8.1: Relay of orchestral overture from Majestic Theatre New Orchestra, under the conductorship of Mr. J. Whiteford Waugh.  
8.10: Contralto solo—Madame Irene Ainsley, "L'Orgue" (Fabre).  
8.14: Instrumental trio—Auckland Trio, "Andante and Scherzo" (Reisiger).  
8.23: Baritone solo—Mr. Walter Brough, "Toreador's Song," from "Carmen" (Bizet).  
8.27: Flute solo—Mr. John Lemmone, "Bolero" (Pressard).  
8.32: Soprano solos—Mrs. J. Parry, (a) "Oh, to be in England" (Brahe); (b) "God's in His Heaven" (Brahe).  
8.39: Relay of orchestral entracte from Majestic Theatre.  
8.43: Lecturette—Mr. A. B. Chappell, M.A.; "Old New Zealand"—No. 13, "A Man-of-war Without Guns."  
8.58: Weather forecast.  
8.59: Piano and violin duet—Miss Ina Bosworth and Mr. C. Towsey, "Allegro Molto" (Grieg).

- 9.3: A presentation of "Merrie England" excerpts (German), produced under the direction of Madame Irene Ainsley.  
The story of "Merrie England" is laid in the glorious days of Queen Elizabeth, who, together with those famous personages of her reign, the Earl of Essex and Sir Walter Raleigh, appear in the opera, the scene of which is laid in the heart of mediaeval England, by the Thames, near Windsor.

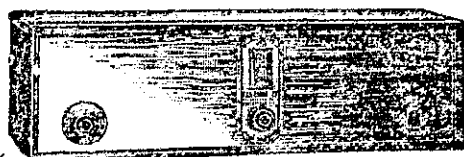
Cast.

Queen Elizabeth ..... Madame Irene Ainsley  
Jill-all-alone ..... Madame Irene Ainsley  
Bessie ..... Mrs. J. Parry  
Earl of Essex ..... Mr. Walter Brough  
Sir Walter Raleigh ..... Mr. Robert Peter

"Love is Meant to Make Us Glad"—Quartet  
"She Had a Letter"—Bessie.  
"Yeomen of England"—Essex and chorus.  
"Come to Arcady"—Raleigh and Bessie.  
"O Peaceful England"—Queen Elizabeth.  
"In England, Merry England"—Quartet.  
"It is the Merry Month of May"—Elizabeth and Raleigh.  
"The English Rose"—Raleigh.  
"Who Shall Say?"—Bessie.  
"Robin Hood's Wedding"—Finale.

- 9.43: Instrumental trio—Auckland Trio, "Henry VIII Dances" (German).  
9.51: Contralto solo—Madame Irene Ainsley, "Out on the Rocks" (Dolby).  
9.55: Flute solos—Mr. J. Lemmone, (a) "By the Brook" (Wetzger); (b) "The Nightingale" (Dorjon).  
10.2: Tenor solo—Mr. Robert Peter, "Where'er You Walk" (Handel).  
10.6: God Save the King.

# RCA



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# Week - All Stations - to June 17

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## 2YA, WELLINGTON (420 METRES), TUESDAY, JUNE 12.

- 3 p.m.: Chimes of the G.P.O. clock.  
 3.1: Selected gramophone items.  
 4.30 and 4.55: Sporting results to hand.  
 5.0: Close down.  
 6.0: Children's hour—Another radio trip with Big Brother Jack and Conductor Stewart on board. The Trinity Methodist Sunday School Party.  
 7.0: News session, market reports, and sports results.  
 7.40: Lecture by representative of the Agricultural Department, "For the Man on the Land."  
 8.0: Chimes of the G.P.O. clock.  
 8.1: Overture—The Orchestra, "Polonaise Militaire" (Chopin).  
 8.10: Vocal quartet—The Orpheus Quartet, "Queen of France" (Schartau).  
 8.14: Soprano solo—Mrs. Alice Harris, "Vainka's Song" (Campbell).  
 8.18: Ballet music—The Orchestra, "Faust" (Gounod).  
 8.28: Humour—Miss Violet Wilson, "Reggie" (Anon.).  
 8.38: Tenor solo—Mr. Arthur Coe, "Lorraine" (Sanderson).  
 8.37: Cello solos—Mr. Geo. Ellwood, (a) "Andante Cantabile" (Franca-telli); (b) "Arioso" (Mozzanno).  
 8.47: Contralto solo—Miss Lily Mackie, "Row, Burnie, Row" (Weston).  
 8.51: Repeat numbers—The Orchestra.  
 9.1: Weather report and announcements.  
 9.3: Vocal quartet—The Orpheus Quartet, "Farewell to the Forest" (Mendelssohn).  
 9.7: Relay of organ solos by Mr. H. Temple White, (a) "Sunset Melody" (Vincent); (b) "Cornelius March" (Mendelssohn).  
 9.17: Baritone solos—Mr. Len. Barnes, (a) "Eleanore" (Mallinson); (b) "Violet" (Mallinson); (c) "Monotone" (Cornelius); (d) "Two Grenadiers" (Schumann).  
 9.29: Humour—Miss Violet Wilson, (a) "Belinda's Blow" (Bird); (b) "Memory" (Cross).  
 9.36: Vocal duet—Mrs. Alice Harris and Mr. Len. Barnes, "Won't You Buy a Spray" (Talbot).  
 9.40: Vocal quartet—The Orpheus Quartet, "Little Cotton Dolly" (Giebel).  
 9.45: Selection—The Orchestra, selection from "Tip Toes" (Gershwin).  
 9.55: Dance numbers—The Orchestra.

## 3YA, CHRISTCHURCH (306 METRES), TUESDAY, JUNE 12.

SILENT DAY.

## 4YA, DUNEDIN (463 METRES), TUESDAY, JUNE 12.

- 3 p.m.: Town Hall chimes.  
 3.1: Gramophone concert.  
 4.0: Address on "Domestic Uses of Electricity," by Mr. G. J. Butcher, of Messrs. Turnbull and Jones, Ltd.  
 4.15: Gramophone items.  
 4.25: Sporting results.  
 4.30: Close down.  
 6.0: Town Hall chimes.  
 6.1: Children's session—Big Brother Bill, Happy Folks' Anthem. Piano-forte solo, Cousin Jack, "The Washington Post" (Sousa). Song, Cousin Eric, "The Little Irish Girl" (Herman Moore). Story-time for the chickabiddies. Violin solo, Cousin Ray, selected. Recitation, Cousin Leonore, "Inky Bill" (Anon.). Letters, birthdays, greetings. Song, Cousin Eric, "Orpheus With His Lute" (Sullivan). Recitation, Cousin Leonore, "Bud Discourses on Cleanliness" (Anon.). Stories for the older children.  
 7.15: News session.  
 7.30: Address by a member of the Otago Tramping Club, "A Walk Around Dunedin."  
 8.0: Town Hall chimes. Concert by the Kaikorai Band, under the conductorship of Mr. E. Franklin, and assisting artists.  
 8.1: March—Band, "Hawke's Bay" (Hopkinson).  
 8.5: Baritone solos—Mr. R. B. Macdonald, (a) "The Lute Player" (Allitsen); (b) "Sacrament" (McDermid).  
 8.11: Recital—Miss Madge Yates, "The Barrel Organ" (Noyes).  
 8.15: Humoresque—Band, "Musical Switch" (Alford).  
 8.30: Tenor solos—Mr. Chas. Edwards, (a) "To Sing Awhile" (Drummond); (b) "Two Eyes of Grey" (McGeoch).  
 8.33: Recital—Mr. Eric Hebdon, "The Game of Life."  
 8.38: Waltz—Kaikorai Band, "Golden Grain" (Trussell).  
 8.48: Contralto solo—Miss Wyn McPeak, "Hindoo Song" (Bemberg).  
 8.52: Comedy sketch—Miss Madge Yates and Mr. Eric Hebdon, "A Curtain Lecture."  
 8.58: Selection—Band, "Largo" (Handel).  
 9.5: Bass solo—Mr. E. G. Bond, "Cobblin'" (Sanderson).  
 9.8: Address—"The Ancient Art of Making Sausages," Pastor W. D. More.  
 9.20: Selection—Band, "Ten Minutes with Richard Wagner" (Wagner).  
 9.30: Vocal duet—Messrs. Edwards and Macdonald, "The Song of the Sword."  
 9.33: Child impersonation—Miss Madge Yates, "Forgiven" (Milne).  
 9.36: March—Band, "Old Comrades" (Telke).  
 9.40: Baritone solo—Mr. R. B. Macdonald, "Rolling Rolling Stone" (Fisher).  
 9.43: Recital—Mr. Eric Hebdon, "A Changed Man" (Anon.).  
 9.48: Selection—Band, "Great and Glorious Is Thy Name."  
 9.53: Contralto solos—Miss Wyn McPeak, (a) "Sapphic Ode" (Brahms); (b) "I Will Await Thee" (Clarke).  
 9.53: Tenor solo—Mr. Chas. Edwards, "This Passion is But An Ember" (Lohr).  
 10.0: March—Band, "Colonel Bogey" (Alford).  
 10.4: Bass solos—Mr. E. G. Bond, (a) "Vagabond" (Molloy); (b) "Myself When Young" (Lehmann).  
 10.10: God Save the King.

## Wednesday, June 13

## 1YA, AUCKLAND (333 METRES), WEDNESDAY, JUNE 13.

- 3 p.m.: Afternoon session—Selected studio items.  
 3.30: Lecture on "Care of the Feet," by Mr. R. Howard Taylor.  
 3.45: Selected studio items.  
 4.0: Literary selection by the announcer.  
 4.8: Selected studio items.  
 4.25: Sports results.  
 4.30: Close down.  
 6.0: Children's session, conducted by Uncle Tom, opening chorus. Song, Cousin Shirley, "Fairies' Umbrellas" (Arundale). Story for the Tiny Tots. Record. Letters and birthdays. Song, Cousin Shirley, "Little Grey Friend" (Arundale). Record. Story-time. Closing chorus.  
 7.15: Lecture—Mr. Geo. H. Ambler, "Poultry-keeping for Women."  
 7.30: News and market reports.  
 8.0: Chimes.  
 8.1: Relay of Auckland Municipal Band concert from the Town Hall (conductor, Mr. Christopher Smith), assisted by the Hazell-Sutherland Duo, who will perform the following items from the studio: Contralto solos—Miss Phyllis Hazell, (a) "Auld Scotch Songs" (Lee-son); (b) "Land of the Sky Blue Water" (Cadman). Baritone solos—Mr. Frank Sutherland, (a) "Time Was I Loved the Mountains" (Lohr); (b) "Merrily Swings My Hammer" (Dix). Vocal duets—Hazell-Sutherland Duo, (a) "Look Down, Dear Eyes" (Fisher); (b) "Love, the Cuckoo" (Fortescue).  
 10.0: God Save the King.

## 2YA, WELLINGTON (420 METRES), WEDNESDAY, JUNE 13.

SILENT DAY.

## 3YA, CHRISTCHURCH (306 METRES), WEDNESDAY, JUNE 13.

- 3 p.m.: Afternoon session—Selected studio items.  
 4.25: Sports results.  
 4.30: Close down.  
 6.0: Children's session—Uncle Peter and Mother Hubbard. Song, Mother Hubbard. Banjo solo, Cousin Tulloch. Story, Uncle Peter. Birthday greetings. Song, Mother Hubbard. Humorous interlude, Uncle Peter and Mother Hubbard. Story, Uncle Peter. Banjo solo, Cousin Tulloch. Good-night songs.

- 7.15: Addington stock market report.  
 7.30: News session.  
 8.0: Chimes and overture.  
 8.5: Mezzo-soprano solo—Miss Hilda Blechynden, "Passion Flower" (Coates).  
 8.9: Euphonium solo—Mr. S. N. Crisp, "Here's to the King" (St. Quentin).  
 8.14: Jazz solo—Mr. Cheslyn O'Connor, "There's Everything Nice About You" (Weldling).  
 8.18: Pianoforte solo—Miss Aileen Warren, "Magondola" (Palmgren).  
 8.22: Baritone solo—Mr. Fred. C. Penfold, "The Lute Player" (Allitsen).  
 8.26: Instrumental trios—Christchurch Broadcasting Trio, "Moderato and Finale," from "Novelliten" (Gade).  
 8.36: Contralto solos—Miss Nellie Lowe, (a) "My Ships" (Squire); (b) "The Dream Canoe" (Squire).  
 8.42: Humorous recital—Mr. A. H. Todd, "In Fifteen Parts" (Crosley).  
 8.47: Clarinet humoresque—Mr. Mal Brunette, "Imitations in a Farmyard" (own arrangement).  
 8.52: Contralto and baritone duet—Miss Nellie Lowe and Mr. F. C. Penfold, "Gray Days" (Johnson).  
 8.56: Weather forecast.  
 8.58: Overture.  
 9.0: Mezzo-soprano solos—Miss Hilda Blechynden, "Rosebuds" (waltz song). (Ardite); (b) "Destiny" (Farrell).  
 9.12: Euphonium solo—Mr. S. N. Crisp, "Maritana" (Wallace).  
 9.17: Jazz solo—Mr. Cheslyn O'Connor, "How I Love You" (Friend and Brown).  
 9.21: Pianoforte solos—Miss Aileen Warren, (a) "A Deserted Farm" (Mac-dowell); (b) "Alla Tarantella," from "In Passing Moods" (Mac-dowell).  
 9.26: Baritone solos—Mr. Fred. C. Penfold, (a) "Son of Mine" (Wallace); (b) "Homeland" (Drummond).  
 9.33: Instrumental trios—Christchurch Broadcasting Trio, (a) "Entr'acte Valse" (Helmshberger); (b) "Scherzo" (Schubert).  
 9.43: Contralto solo—Miss Nellie Lowe, "If I Might Come to You" (Squire).  
 9.47: Clarinet solo—Mr. Mal Brunette, "La Serenata" (Braga).  
 9.52: Humorous recitals—Mr. A. H. Todd, (a) "It Does Go" (Spurr); (b) "Shell Shock" (Chevallier).  
 God Save the King.

## 4YA, DUNEDIN (463 METRES), WEDNESDAY, JUNE 13.

SILENT DAY.

## Thursday, June 14

## 1YA, AUCKLAND (333 METRES), THURSDAY, JUNE 14.

- 3 p.m.: Afternoon session—Selected studio items.  
 3.30: Lecture on "Gas Cooking," by a representative of the Auckland Gas Company.  
 3.45: Selected studio items.  
 4.0: Literary selection by the announcer.  
 4.8: Selected studio items.  
 4.25: Sports results.  
 4.30: Close down.  
 6.0: Children's session, conducted by Peter Pan, assisted by the Bayfield School Choir. Part-song, "Drake's Drum." Choir. Pianoforte solo, Cousin Mac, "Hungary." Recitation, Cousin Ray, "New Zealand." Unison song, Choir. Letters and birthdays. Part-song, Choir, "The Shepherd's Song." Song, Cousin Marjorie, "The Night Nursery." Duet, Cousins Kathleen and Raymond, "Ye Gentle Warblers." Recitation, Cousin Maude, "The Italian and the Rose." Part-song, choir, "Waiata Poi" (Hill). Story-time.  
 7.15: News and reports.  
 8.0: Chimes.  
 8.1: Orchestra, "Fra Diavolo" Overture (Auber).  
 8.9: Humorous sketch—Griffiths Duo, "Under an Umbrella."  
 8.15: Instrumental trio—Auckland Trio, "Trio, Op. 56, Finale" (Reissiger).  
 8.25: Vocal trios—The Snappy Three, (a) "Souvenirs" (Nicholls); (b) "Bungalow and You" (Hagan).  
 8.33: Mandolin solo—Mr. J. O'Kane, "Zampa" Overture (Herold).  
 8.38: Humour—Mr. A. McElwain, some humour.  
 8.43: Pianoforte solo—Mr. Cyril Towsey, "Impromptu in B Flat" (Schubert).  
 8.46: Weather forecast.  
 8.48: A presentation by the St. Andrew's Quartet of the song cycle, "The Little Sunbonnet" (Lohr).  
 Vocal quartet—"The Little Sunbonnet" (Lohr).  
 Soprano solo—"Little Print Bonnet" (Lohr).  
 Vocal duet—"Where the Violets Grow" (Lohr).  
 Baritone solo—"Little Molly Mary" (Lohr).  
 Vocal quartet—"A Lady Came to Our Town" (Lohr).  
 Tenor solo and quartet—"Somewhere Town" (Lohr).  
 Vocal duet—"The Rose and the Nightingale" (Lohr).  
 Contralto solo—"If I Had a Dolly" (Lohr).  
 Vocal quartet—"So Glad of Heart" (Lohr).  
 9.23: Instrumental trio—Auckland Trio, "Handel in the Strand" (clog dance). (Grainger).  
 9.37: Humorous sketch—The Griffiths Duo, "Taming a Shopper."  
 9.43: Mandolin solos—Mr. J. O'Kane, (a) "Le Cygne" (Saint-Saens); (b) "March," "Tannhauser" (Wagner).  
 9.49: Humour—Mr. A. McElwain, more humour.  
 9.54: Vocal trios—The Snappy Three, (a) "Solo"; (b) "The Blue Room" (Rodgers); (c) "The Girl Friend" (Richards).  
 10.2: God Save the King.

## 2YA, WELLINGTON (420 METRES), THURSDAY, JUNE 14.

- 3 p.m.: Chimes of the G.P.O. clock.  
 3.1: Selected gramophone items.  
 4.30 and 4.55: Sporting results to hand.  
 5.0: Close down.  
 6.0: Children's hour—Auntie Dot and pupils of Miss Myrtle Lee. Choruses, songs, stories, and greetings.  
 7.0: News session, market reports, and sports results.

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OVER £1740 was raised by the recent Berlin Radio Ball, and after taxes had been deducted approximately £1267 was available for distribution among various charities.

IN each one of the 7700 guest-rooms of the Statler hotels in six U.S.A. cities there are arrangements for radio reception, with a choice of two programmes. (Guests can have radio at any time without request or charge. In addition to the two programmes, which are looked after by skilled operators in the control-room, the hotel orchestra is sometimes "laid on," as well as important speeches during banquets. In the larger rooms there are loudspeakers; in the others the 'phones are placed in a drawer of a table near the head of the bed.

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# Programmes Continued

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- 8.0: Chimes of the G.P.O. clock.  
Studio concert by the Wellington Salvation Army Citadel Silver Band, under the conductorship of Conductor H. J. Dutton, assisted by 2YA artists.
- 8.1: March—The Band, "Boston" (arr. Broughton).  
8.6: Vocal quartet—Mellow Fellows, "Breeze" (Macdonald).  
8.10: Pianoforte solo—Mrs. Petersen, "The Rustle of Spring" (Sinding).  
8.14: Constancy—The Tenor Fellow, "Phyllis Is My Only Joy" (Whelpley).  
8.18: Cornet solo, with band accompaniment—Bandsman N. Goffin, "Silver Threads" (arr. Twitchin).  
8.23: Vocal duet—The Long and Short Fellow, "Cross Talk" (Shepherd).  
8.28: Descriptive selection—Salvation Army Band, "Olivet and Calvary" (arr. Coles).  
8.36: Mezzo-soprano solo—Miss Marjorie Cadman, "A Dream of To-night" (Nichol).  
8.40: Selection—The Band, "Warriors of the Cross" (arr. Kitching).  
8.47: Elocution—Miss Thelma Adams, "Perkins's Baby" (Anon.).  
8.52: Hymns—The Band, (a) "Aberyswyth," (b) "Martyne."  
8.59: Weather report and announcements.  
9.1: Lecturette—Mr. Johannes Andersen, "Native Birds."  
9.13: Descriptive selection—The Band, "The Wanderer" (Van der Kam).  
9.20: Midnight chimes—The Middle Fellow, "When the House is Asleep" (Haigh).  
9.24: March—The Band, "The Advance" (Cotterill).  
9.29: Mezzo-soprano solo—Miss Marjorie Cadman, "Blow, Blow, Thou Winter Wind" (Quilter).  
9.33: Piano and organ duet—Miss Gray, L.T.C.L., and Mrs. Petersen, "Cavaleria Rusticana" (Mascagni-Bastini).  
9.38: Verbal assurance—The Funny Fellow, "Stories" (original).  
9.42: Hymn tunes—The Band, (a) "Hollingside," (b) "Vesper Hymn."  
9.48: Mere noise—The Bass Fellow, "Up from Somerset" (Sanderson).  
9.52: Instrumental quartet—The Band, "Handel's Melodies."  
9.57: Selection—The Band, "St. Paul" (Mendelssohn, arr. Hawkes).  
10.3: Good night—All the Fellows, "Old Kentucky Home" (traditional).  
10.7: March—The Band, "Tyall Bay" (Adams).

## 3YA, CHRISTCHURCH (306 METRES)—THURSDAY, JUNE 14.

3 p.m.: Afternoon session.

4.25: Sports results.

6.0: Children's session.

Chimes. Opening song, Chuckle and Aunt Pat, "How Do You Do?"; story by Aunt Pat; chorus by Woolston Choir; story by Chuckle; song by Cousin from Woolston Choir; the Listening Music, Chuckle and Aunt Pat, "Spring Song"; chorus by Woolston Choir; birthdays; song by Cousin from Choir; story by Chuckle; chorus and Good-night Song by Choir.

7.15: News session.

7.30: Talk—Professor A. H. Tocket, "Rural Credits" (M.S.). (under auspices of Canterbury Progress League).

8.0: Chimes.

8.1: Overture.

### Vocal Programme of German Composers.

- 8.5: Contralto and tenor duet—Mrs. Ann Harper and Mr. Harold Prescott, "On Wings of Music" (Mendelssohn); followed by soprano solos by Madame Gower Burns, (a) "Damon" (Strange); (b) "Rose Among the Heather" (Schubert).  
8.14: Cello solo—Mr. Harold Beck, "Aria" (Bach).  
8.19: Baritone solo—Mr. Bernard Rennell, "In Questa Tomba" (Beethoven).  
8.23: Cornet duet—Messrs. R. Ohlson and Benson, "Down the Vale" (own arrangement) (Moir).  
8.28: Contralto solos—Mrs. Ann Harper, (a) "To Music" (Schubert); (b) "The Gardener" (Wolf).  
8.34: Instrumental trio—Christchurch Broadcasting Trio, "Scherzo" (Beethoven).  
8.44: Tenor solo—Mr. Harold Prescott, "Serenade" (Schubert).  
8.48: Humorous recitation—Miss Naare Hooper, "The Freckled Faced Girl" (Anon.).  
8.52: Flute solo—Mr. W. Hay, "Idylle" (Godard).  
8.56: Soprano and baritone duet—Madame Gower-Burns and Mr. Bernard Rennell, "Calm and Silent Night" (Gretze).  
8.59: Weather forecast.  
9.0: Overture.  
9.5: Contralto solos—Mrs. Ann Harper, (a) "Sapphic Ode" (Brahms); (b) "The Vain Suit" (Brahms).  
9.11: Cello solo—Mr. Harold Beck, "Minuetto" (Becker).  
9.16: Baritone solo—Mr. Bernard Rennell, "Autumn" (Franz).  
9.20: Cornet duet—Messrs. R. Ohlson and Benson, "Bolero" (the Gladiators) (Le Thiere).  
9.25: Soprano and contralto duet—Madame Gower-Burns and Mrs. Ann Harper, "Venetian Boat Song" (Blumenthal); followed by tenor solo—Mr. Harold Prescott, "Cradle Song" (Kreisler).  
9.32: Instrumental trios—Christchurch Broadcasting Trio, (a) "Prize Song" (Wagner); (b) "Romance" (Mozart).  
9.42: Soprano solos—Madame Gower-Burns, (a) "Glad Tidings" (Blumenthal); (b) "Slumber Song" (Schubert).  
9.50: Humorous recitation—Miss Naare Hooper, (a) "The Road of Ten Thousand Crosses" (Hayes); (b) "When the Minister Comes to Tea" (Anon.).  
9.56: Flute solo—Mr. W. Hay, "Chant Pastorale" (Anderson).  
10.0: Vocal quartet—Grand Opera Quartet, "Early Spring" (Mendelssohn).  
God Save the King.

## 4YA, DUNEDIN (463 METRES)—THURSDAY, JUNE 14.

7 p.m.: Town Hall chimes.

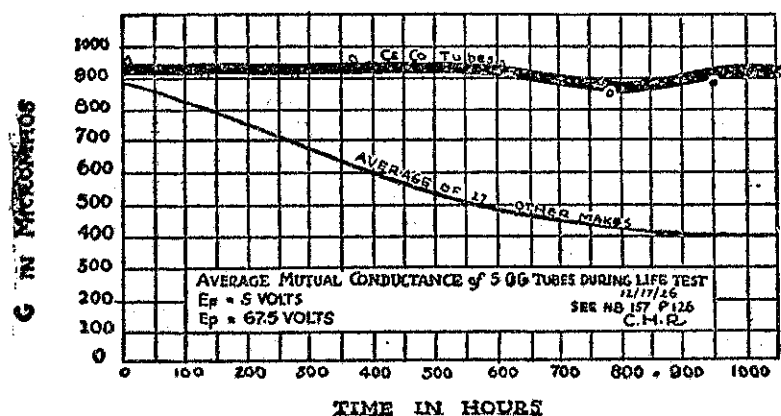
7.1: Request gramophone concert.

7.40: News session.

8.0: Town Hall chimes. Comedy programme.

8.1: Relay of orchestral music from Octagon Theatre Orchestra, under the direction of Monsieur de Rose.

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DX, of Port Augusta, S.A., writes to the Melbourne "Listener In":—"I would feel very much obliged if you—or any reader of The Listener In—could give me some information with regard to a station, which I have heard lately, and which uses the call sign 2ZM. This station operates on about 278 metres, and is, apparently, a New Zealander in the Wellington district, but I have been unable to find this call sign in the 'Handbook.' This is undoubtedly the Palmerston North station, 2ZM, 278 metres, the F sounding not unlike M at a great distance. It's about 1800 miles from Palmerston North to the South Australian listener."

DUST, dirt, or ebonite drilling may easily be removed from any awkward internal part of a wireless set by using a camel-hair brush mop. When the undesired matter cannot be swept straight up with the brush, it is only necessary slightly to damp the hair, or even breathe upon it, and thus pick up the dust on the brush tip. Rub the brush on a cloth, and repeat the procedure until all the dirt is removed in this manner.

A LARGE number of hospitals in Sydney now have radio sets installed. The Royal Prince Alfred Hospital, at Camperdown, has 500 headphones and 12 loudspeakers in use. The complete cost of the installation was £1100. The medical superintendent, W. A. Bye, when asked his views on the advantage of radio in hospitals, said: "Wireless in hospitals, in my opinion, is a great boon to the sick and suffering. It is very much appreciated by all patients who are well enough to listen-in, and it helps to pass many hours pleasantly, which would otherwise be long and dreary. It is especially appreciated by patients who are suffering from chronic diseases, necessitating long treatment, and whose convalescence is slow. Altogether, I consider it a wonderful asset to our institution."

If transformers of too high ratio are used, distortion will result. If possible transformers of the same make should always be used when building a set, as some manufacturers wind these instruments in different directions, thus causing oscillation as soon as the audio stages are turned on by means of the rheostat. The remedy for this is to reverse the leads on one of the transformers, taking the plate lead to B plus, and vice versa.

A RATHER interesting demonstration of the loudspeaker—or perhaps one should say the super loudspeaker—was made some little time back over a number of New England (U.S.A.) towns, the people of which were suddenly surprised to hear a tremendous voice from out of the skies. As a matter of fact "the voice from the sky," as it is called, proceeded from a giant loudspeaker carried by an aeroplane, the whole arrangement being used for advertising purposes. The last stage of the low-frequency amplifier employed a set of four Western Electric 3-kilowatt valves, fed at full voltage by a pair of wind-driven generators delivering 500 watts each. When the machine was 3000 feet up, the sound could be heard and the speech understood over a circle of 5 miles radius. During a flight of about 5 hours it was estimated that 300,000 people heard the advertising messages.

UNLESS otherwise stated, valves of the same make and characteristics should be used in a set, for valves of various makes require critical voltage adjustment.

THE "dielectric" of a condenser is the insulator that separates one set of plates from the other. Although the passage of oscillating currents "through" a condenser takes place with remarkable facility, yet at high frequencies a certain amount of energy is absorbed in the insulation or dielectric, and this is called a dielectric absorption loss. When air is the insulator between the two sets of plates, such a loss is negligible, and in a mica condenser it is trifling for all ordinary purposes. But in paper condensers the losses can be comparatively large, and consequently for some purposes mica condensers are often specifically recommended.

FOR a small soldering job such as joining two twisted wires together, it is advisable to heat the joint well first, as the solder will then run through the joint and make a solid connection.

TO prove that a condenser can be charged, and will hold a charge, connect one side of a pair of telephones to one side of a dry battery, and the other side of the phones to one side of the condenser. Now put the earphones on and touch the condenser with a lead from the remaining side of the battery. A loud click will be heard, and if the lead is removed and replaced several times, the clicks will become weaker as the condenser becomes charged. If clicks are heard at the same strength each time the connection is made—you will know that your condenser is short circuited. By connecting the charged condenser across a voltmeter, a sharp movement of the needle will be noticed as the condenser discharges.

- 8.11: Popular songs—Miss Billie Lorraine, (a) "Broken-Hearted" (Henderson); (b) "C'est Vous" (Green).  
8.17: Comedy sketch—The Two Blue Ducks, "On Tour in India," Part 1.  
8.27: Piano-accompaniment solo—Mr. E. Heeney, "Drifting And Dreaming" (Van Alstyne).  
8.30: A little entertainment—Mr. Percy James (a Peep into Coster-land), (a) "My Old Dutch"; (b) "The Coster's Courtship"; (c) "Wot Cheer" (Chevalier).  
8.40: Novelty piano solos—Mr. T. V. Anson.  
8.47: Light soprano solo—Miss Jacqueline Burke, "Love's Own Kiss" (Trinl).  
8.51: Relay of orchestral music from Octagon Theatre.  
9.0: Weather forecast.  
9.2: Popular solos—Mr. Billy Gay, (a) "So Is Your Old Lady" (Dubin); (b) "Sunday" (Moller).  
9.10: Comedy sketch and duet—Miss Lorraine and Mr. Percy James, "The Stage Hand's Idea of Hamlet."  
9.30: Light soprano solos—Miss Jacqueline Burke, (a) "Sail, My Ships" (Phillips); (b) "Prince of My Maiden Fancies" (Kelman).  
9.36: Novelty pianoforte solo—Mr. T. V. Anson.  
9.39: Popular solo—Mr. Billy Gay, "Go Along Mule" (Creamer).  
9.42: Comedy sketch—The Two Blue Ducks, "On Tour in India," Part 2.  
9.47: Popular solo—Miss Billie Lorraine, selected.  
9.50: Piano-accompaniment solos—Mr. E. Heeney, (a) Scotch Selection; (b) "Ever of Thee" (Hall).  
9.55: Relay of orchestral music from Octagon Theatre.  
10.2: Close down.

## Friday, June 15

### 1YA, AUCKLAND (333 METRES)—FRIDAY, JUNE 15.

3 p.m.: Afternoon session—Selected studio items.

4.0: Literary selection by the announcer.

4.8: Selected studio items.

4.25: Sports results.

4.30: Close down.

6.0: Children's session, conducted by Nod—Pianoforte solo, Cousin Alison, "Golliwog's Cakewalk" (De Bussy); recitation, Cousin Nancy, "Midnight"; song, Nod, selected; letters and birthdays; pianoforte solo, Cousin Alison, "Lyric Pieces" (Grieg); recitation, Cousin Leonie, "The Eskimo"; bed-time story.

7.15: Talk by Mr. George Campbell on "Motoring."

7.30: News and market reports.

8.0: Chimes.

8.1: Orchestral selection—"Oberon Overture" (Weber).

8.7: Vocal quartet—Madame Mary Towsey's Quartet, "Madrigal" ("Mikado") (Sullivan).

8.10: Instrumental trio—Auckland Trio, "Trio in B Flat—1st Movement" (Schubert).

8.16: Elocutionary—Mr. J. F. Montague, (a) "Not Too Bad"; (b) "The Old, Old Story."

8.23: Contralto solo—Miss G. Evans, "I Heard You Singing" (Conates).

8.26: Instrumental quartets—The Internationals, (a) "Miss Annabella Lee" (Fox); (b) "Breeze" (Hanley).

8.32: Novelty—The Wizard, Word Wangles.

8.50: Tenor solo—Mr. Reg. Newberry, "Like Stars Above" (White).

8.54: Cello solo—Miss Molly Wright, "Tarantelle" (Popper).

8.58: Weather forecast.

9.0: A presentation of "The School For Scandal" (Sheridan), by the Auckland Comedy Players and Mr. J. F. Montague.

"The School for Scandal" was first produced at Drury Lane Theatre in 1777, just 150 years ago, and the success achieved then has been confirmed by succeeding generations right up to the present day. It is one of the imperishable contributions to the English stage—written by an Irishman!

Cast.

Sir Peter Teazle ..... Mr. J. F. Montague.  
Lady Teazle ..... Miss Melzie Johnston.  
Servant ..... Mr. Hellyer.

9.25: Instrumental trio—Auckland Trio, "Hungarian Dances—Nos. 1, 2 and 3" (Brahms).

9.33: Contralto solo—Miss G. Evans, "Salaam" (Lang).

9.36: Orchestral—"Liebestraume" ("Dream of Love") (Liszt).

9.39: Recital—Miss Melzie Johnston, "Break, Break, Break."

9.41: Instrumental quartets—The Internationals, (a) "The Song is Gone" (Berlin); (b) Song at Piano (Clyde Howley); (c) "Every Evening" (Walter).

9.52: Humorous song cycle—Four Cautionary Tales and a Moral, presented by Madame Mary Towsey and Mr. John Bree, (a) "Rebecca"; (b) "Jim"; (c) "Matilda"; (d) "Henry King"; (e) "Charles Augustus Fortescue."

10.10: God Save the King.

### 2YA WELLINGTON (420 METRES)—FRIDAY, JUNE 15.

3 p.m.: Chimes of the G.P.O. clock.

3.1: Selected gramophone items.

4.30 and 4.55: Sports results to hand.

5.0: Close down.

6.0: Children's session, conducted by Uncle Ernest, assisted by party from the Technical College—duets, songs, travel stories and greetings.

7.0: News session, market reports and sports results.

8.0: Chimes of the G.P.O. clock.

8.1: Overture—The Orchestra, "Gluck" (Suppe).

8.9: Vocal quartet—Apollo Singers, "The Old Folks at Home" (Cornwall).

8.14: Contralto solo—Miss Hilda Chudley, "A Prayer to Our Lady" (Ford).

8.18: Suite—The Orchestra, "Huiwatha (Coleridge-Taylor): (1) "The Wooing," (2) "The Marriage Feast," (3) "Bird Scene," (4) "Conjurer's Dance," (5) "Departure," (6) "Reunion."

8.30: Humour—Mr. Cedric Gardiner, "If Life Were a Play" (Anon).

8.35: Tenor solos—Mr. E. W. Robbins: (a) "Because" (D'Hardelot); (b) "The Ships of Arcady" (Head).

8.42: Hawaiian trios—Palmer's Hawaiian Trio: (a) "Honolulu March" (M.S.); (b) "Breeze" (Macdonald).

8.49: Baritone solo—Mr. S. E. Rodger, "The Song of the Waggoner" (Breville-Smith).

8.51: Weather forecast.

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Radio Dept.



# Programmes Continued

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- 8.56: Repeat numbers—The Orchestra.  
9.8: Humour—Mr. Cedric Gardiner, "The Load on my Mind" (Wellbeloved).  
9.13: Vocal duet—Miss Hilda Chudley and Mr. E. W. Robbins, "Rise Up" (Traditional).  
9.18: Instrumental trio—Symons-Ellwood-Short Trio, selected.  
9.28: Soprano solo—Miss Moana Goodwill, "The Life of a Rose" (Lehmann).  
9.32: Baritone solo—Mr. S. E. Rodger, "Fluorite" (McGeogh).  
9.36: Hawaiian trios—Palmer's Hawaiian Trio, (a) "Hello Aloha" (M.S.); (b) "Aloha Land" (M.S.).  
9.43: Contralto solo—Miss Hilda Chudley, (a) "Now Sleeps the Crimson Petal" (Quilter); (b) "Sylvan" (Landon Ronald).  
9.50: Vocal quartet—Apollo Singers, "Drink to Me Only" (Quilter).  
9.54: Selection—The Orchestra, "The Mikado" (Sullivan).

## 3YA CHRISTCHURCH (306 METRES)—FRIDAY, JUNE 15.

- 3 p.m.: Afternoon session—selected studio items.  
4.25: Sports results.  
4.30: Close down.  
6.0: Children's session—Big Brother and Aunt Pat—Opening chat and story by Big Brother; song, Aunt Pat; recitation, Cousin Evelyn, "What Can a Little Chap Do?"; story, Big Brother; pianoforte duet, Cousins Walter and Maurice; Health Game Talk, by "The Captain"; song, by Cousin Marjory; birthdays; recitation, Cousin Evelyn; story, Big Brother; goodnight songs.  
7.15: News session.  
8.0: Chimes and rebroadcast of 2YA (Wellington) Studio Orchestra. Popular programme, including vocal excerpts from the opera "Martha" (Flotow).  
8.5: Vocal quartet—Melodious Four, "Why Must Every Joy" (Flotow).  
8.8: Violin solo—Miss Irene Morris, "Romance" (Tours).  
8.13: Vocal trio—Melodious Trio, "Lady Fair" (Flotow).  
8.16: Mouth organ solo—Mr. Arthur Ellwood, "Where is My Wandering Boy To-night" (own arrangement).  
8.20: Tenor and bass duet—Melodious Duo, "What a Chatter" (Flotow).  
8.23: Pianoforte novelties—Mr. Alec Cowhan, "Improvisations on Popular Melodies" (own arrangement).  
8.28: Vocal quartet—Melodious Four, "Oh, See! At Us They're Looking" (Flotow).  
8.31: Instrumental trio—Christchurch Broadcasting Trio, "Rondo" (Reissiger).  
8.30: Soprano and tenor duet—Miss Frances Hamerton and Mr. Russell Sumner, "Kind and Gentle is This Stranger" (Flotow).  
8.42: Piano and accordion solo—Mr. Herbert Smith, Popular Jazz Music Melodies (own arrangement).  
8.47: Vocal quartet—Melodious Four, "I'm Filled With Consternation" (Flotow).  
8.51: Dramatic recital—Mr. Campbell Brown, "The Highwayman" (M.S.).  
8.59: Weather forecast.  
9.0: Overture.  
9.5: Contralto solo—Miss Belle Renaut, "Huntress Fair" (Flotow).  
9.8: Violin solo—Miss Irene Morris, "Tempo di Minuetto" (Pugnani-Kreisler).  
9.13: Vocal quartet—Melodious Four, "Haste We" (Flotow).  
9.16: Mouth organ solos—Mr. Arthur Ellwood, (a) "Honey, Stay in Your Own Backyard" (own arrangement). (b) "The Old Rustic Bridge by the Mill" (own arrangement).  
9.22: Soprano solo—Miss Frances Hamerton, "Tis the Last Rose of Summer" (Flotow).  
9.26: Jazz pianoforte novelties—Mr. Alec Cowhan, "Extemporisations on Well-known Melodies" (own arrangement).  
9.31: Tenor solo—Mr. Russell Sumner, "None So Rare" (Flotow).  
9.35: Instrumental trios—Christchurch Broadcasting Trio, (a) "Cantabile," from "Samson and Delilah" (Saint-Saens), (b) "Anitra's Dance" (Greig).  
9.45: Contralto and bass duet—Miss Belle Renaut and Mr. T. D. Williams, "What's to Do" (Flotow).  
9.48: Piano, accordion, and tin whistle solos—Mr. Herbert Smith, Musical Melodies (own arrangement).  
9.53: Humorous recital—Mr. Campbell Brown, "The Ballroom" (M.S.).  
9.57: Vocal quartet—Melodious Four, "Here are Teats and Booths" (Flotow). God Save the King.

## 4YA DUNEDIN (463 METRES)—FRIDAY, JUNE 15.

- 3 p.m.: Town Hall chimes.  
3.1: Gramophone concert.  
3.15: Talk on "Fashions," by a representative of the D.I.C. Ltd.  
3.30: Afternoon tea music from the Savoy.  
3.45: Studio music.  
4.0: Further music from the Savoy.  
4.15: Gramophone items.  
4.25: Sports results.  
4.30: Close down.  
6.0: Town Hall chimes.  
6.1: Children's session—Aunt Sheila and Big Brother Bill, Happy Folks Anthem; pianoforte solo, Cousin Edna, selected; song, Cousin Molly, "Little Mary Faucett" (Witty); Storytime for the Chickabiddies; recitation, Cousin Rona, "Wooden Legs" (Anon); duet, Cousins Rona and Molly, "Two Dolls" (Crewes); letters, birthdays, and greetings; song, Cousin Rona, "Arcadian Lullaby" (Krogmann); storytime for the older children.  
7.15: News session.  
8.0: Town Hall chimes.  
8.1: Contralto solos—Miss Dorothy Skinner, (a) "Whatever is, is Best" (Lohr); (b) "Absent" (Metzger).  
8.6: Pianoforte solo—Miss Alice Wilson, F.T.C.L., "Claire De Luna" (Debussy).  
8.15: Bass solo—Mr. Neil Black, "Go to Sea" (Trotter).  
8.19: Flute solo—Mr. Chas. E. Gibbons, "Norma No. 2" (Bellini).  
8.25: Orchestral selection.  
8.30: Contralto solo—Miss Dorothy Skinner, "Sognal" (Schira).  
8.34: Pianoforte solos—Miss Alice Wilson, F.T.C.L., "Morning" (Greig); (b) "Anitra's Dance" (Greig).  
8.44: Bass solos—Mr. Neil Black, (a) "Song the Anvil Sings" (Petric); (b) "My Ain Wee Hoose" (Munro).  
8.51: Flute solo—Mr. Chas. E. Gibbons, "Lucia di Lammermoor" (Donizetti).  
8.55: Weather forecast.  
9.0: Relay of dance music from the Savoy—Alf. Carey and his Orchestra.  
10.0: Close down.

## Saturday, June 16

### 1YA, AUCKLAND (333 METRES)—SATURDAY, JUNE 16.

- 2.45 p.m.: Relay description of Rugby football from Eden Park.  
6.0: Children's session conducted by Cinderella, assisted by Hobo and Mrs. Hobo—Record; stories and jokes, Hobo; letters and birthdays; song, Cinderella, "Nursery Jingles"; talk by Hobo; musical item by Mrs. Hobo; story-time.  
7.15: News and sports results.  
8.0: Chimes.  
8.1: Relay of Auckland Municipal Choir concert (under Mr. Maughan Barnett) from the Town Hall—Choir and organ selections.  
9.30: Relay of dance music by "The Internationals" (under Mr. Clyde Howley), from the Dixieland Cafeteria.  
11.0: God Save the King.

### 2YA, WELLINGTON (420 METRES)—SATURDAY, JUNE 16.

- 3 p.m.: Chimes of the G.P.O. clock.  
3.1: Relay description of Rugby football match from Athletic Park (Mr. Chas. Lamborg announcing).  
6.0: Children's session—Auntie Dot and Uncle Toby, assisted by pupils of Miss Marie Petersen—Choruses, duets, stories and greetings.  
7.0: News session, market reports and sports results.  
8.0: Chimes of the G.P.O. clock.  
8.1: Overture—The orchestra, "Mélusine."  
8.9: Vocal quartet—Melodie Four, "The Dear Little Shamrock" (Dicks).  
8.14: Tenor solo—Mr. Sam Duncan, "When Other Lips" (Balle).

AUSTRALIAN listeners are puzzled as to the identity of a broadcast station, RJLO, heard on 450 metres. This is on a wavelength between 2FC, Sydney, 442 metres, and 3AR, Melbourne, 484 metres. "Switch" suggests that the mysterious station is either in China, or is a Russian Eastern station.

"MANAWATU" (Palmerston North) writes suggesting that the Japanese station heard on the wavelength of 4QC Brisbane, after the latter has closed down, is JOHK. He believes that the Japanese's difficulty in pronouncing the H makes it sound like A. JOAK, he reports, is distinctly heard on a rather shorter wavelength—375 metres.

"R.M.O." (Remuera) writes that he recently received the following reply from an American radio manufacturing company in response to his inquiry re A.C. tube sets:—"Our A.C. tube sets are designed to operate at 115 volts with a margin of variation of 10 per cent. either way, giving a safe operating variation between 103 and 127 volts. There are localities where lighting loads are not well balanced, and where the fluctuations are extreme, an A.C. tube set is not a desirable thing to use. . . . The tone problems in an A.C. tube set are much more difficult than in the battery type because of the so-called 'A.C.' hum." "Switch" has seen several A.C. valve sets operated in Wellington, and found that they excelled in tone, the hum from the A.C. line not being audible, and they were not affected by line current fluctuations.

THE saxophone, which has figured so much in broadcast music, was, it is said, invented in 1840 by Adolphe Sax, who specialised in making wind instruments for French military bands.

A WRITER in the London "Popular Wireless" says: The Government of Colombia (South America) has ordered a broadcasting station for Bogotá, the capital, and the presumption is that the service will be operated by the Government—at a dead loss, I should say. Colombia is a hot-bed of "atmospherics" most of the year, and is covered with mountains; hence reception will present some pretty problems, and a "regional scheme" would make Captain Eckersley think on all gears at once.

WITH regard to the earth connection, it is too often assumed that any water pipe is a good earth, and earth leads are sometimes found secured to waste pipes which never even enter the ground. If a water pipe is to be used, the main cold water supply pipe should always be selected.

IF your accumulator terminals are coated with a green deposit, this may be removed by a solution of ordinary washing soda.

MARCONI'S earliest experiments with wireless waves took place in 1895 and 1896, when he used wavelengths half an inch long. Now some stations use wavelengths as long as 20,000 metres, equal to 787,000 inches! A German commercial station uses a wavelength 1,259,520 inches long. 2FC's wavelength in inches is 17,397; 2BL's 13,894 inches, and 3LO's wavelength in inches is 14,002. To find the wavelength in inches of any other station, multiply the number of metres in the wavelength by 39.36, and divide by 100.

SOME have found it difficult to understand how a radio frequency amplifier amplifies weak signals more in proportion than strong signals, while an audio frequency amplifier amplifies strong signals more than weak ones. The secret lies in the fact that the radio frequency amplifier amplifies the voltage applied to the detector valve, and is not concerned with increasing the power output, while the audio frequency amplifier must amplify the power available to actuate the diaphragm of the phones or the loud-speaker. Vibrating a diaphragm or cone and propagating sound waves that must run through thousands of cubic feet of air and make themselves heard by many ears requires much more energy than it does to increase the grid potential of a valve.

IN every Australian State, with the exception of Western Australia, the number of wireless licenses issued in April showed an increase over those issued in March. One month's increase for New South Wales was 1141 licenses.

A WRITER in the London "Popular Wireless" says:—"The 'ultra-short waves' are now undergoing startling developments. Not until this year has transatlantic work been carried out on 10 metres, but it has now been accomplished four or five times, and the 10-metre wave, after the initial trouble in getting down there, seems fairly consistent. I am not forecasting the growth of broadcasting stations on 10 metres; but, after all, the whole spectrum of short wave-lengths has been brought into use very slowly, and 'a bit at a time,' and there is no possible reason why the 10-metre band should not ultimately prove the pick of the whole band."

- 8.18: Italian mandolin—Mr. Lad Haywood, (a) "That Saxophone Waltz" (Nisk); (b) "Dream Kisses" (Jerome).  
8.25: Baritone solo—Mr. R. S. Allwright, "Pack and Penny Day" (Martin).  
8.29: Novelty selection—The orchestra, "Dragon Fly" (Finck); valse, the orchestra, "Il Bacio" (Arditi).  
8.36: Light vocal selection—The Glad Idlers, "Little Brown Baby" (Lowe).  
8.41: Humour—Mr. Geo. Titchener, "Have I Reached the North Pole?" (Little Titch).  
8.47: Soprano solos—Miss Nora Gray, (a) "Briskay Love Lilt" (arr. Kennedy Fraser); (b) "The Cuckoo Clock" (Grant-Schaefer).  
8.51: Repeat numbers—The orchestra.  
8.59: Weather forecast.  
9.1: Vocal quartet—Melodie Four, "A Musical Muddle" (Lewis).  
9.6: Novelty selection—The orchestra, "Voice of the Bells" (Thurban).  
9.12: Tenor solos—Mr. Frank Bryant, (a) "Cabbage Roses" (McGeogh); (b) "Here in the Quiet Hills" (Carne).  
9.18: Italian mandolin solos—Mr. Lad Haywood, (a) "The Song is Ended" (Berlin); (b) "At the End of An Irish Moonbeam" (Golden).  
9.25: Soprano solo—Miss Nora Gray, "What a Wonderful World It Would Be" (Lohr).  
9.29: Bass solo—Mr. W. W. Marshall, "Rocked in the Cradle of the Deep" (Knight).  
9.32: Selections—The orchestra, "Yeoman of the Guard" (Sullivan).  
9.40: Humour—Mr. Geo. Titchener, "Song Without a Name."  
9.45: Light vocal selection—The Glad Idlers, "Tea-Time To-morrow" (Long).  
9.50: Vocal quartet—Melodie Four, "A Vocal Combat" (Dudley Buck).  
9.55: Dance programme with vocal choruses by the Glad Idlers.  
11.0: Close down.

## 3YA, CHRISTCHURCH (306 METRES)—SATURDAY, JUNE 16.

- 2.45 p.m.: Relay of Rugby football from Lancaster Park.  
6.0: Children's session—Uncle Sam and Aunt May. Bed-time stories and birthday greetings; half an hour's programme by Competitions prize-winners (pupils of Mrs. Enid Frye).  
7.15: News session.  
7.30: Sports results.  
8.0: Chimes and rebroadcast of orchestra from 2YA, Wellington.  
8.5: Soprano and tenor duet—Miss Mabel Thomas and Mr. David McGill, "May-day Morn" (Slater).  
8.9: Banjo solo—Mr. Ken Tullock, "Tune Tonic" (Grimshaw).  
8.14: Bass solo—Mr. E. J. Johnson, "Prince Ivan's Song" (Allitsen).  
8.18: English concertina duet—Messrs. Theo. and Frances Gunther, "Sweet Chiming Bells" (Shattuck).  
8.23: Soprano solo—Miss Mabel Thomas, "Irish Lullaby" (Needham).  
8.27: Instrumental trios—Christchurch Broadcasting Trio, (a) "Intermezzo" (from "Cavalleria Rusticana") (Mascagni); (b) "Scherzo" (Mendelssohn).  
8.37: A piano and Mr. Cyril Avondale, (a) "The Difference" (own arr.); (b) "Babies" (own arr.).  
8.44: Tenor solo—Mr. David McGill, "Obstination" (Fontainelles).  
8.48: Dramatic recital—Mr. Jack Birch, "Banty Tim" (a story of the American Civil War) (MS.).  
8.57: Weather forecast.  
9.0: Overture.  
9.5: Operatic duet—Miss Mabel Thomas and Mr. David McGill, "Oh, Tender Moon" (from "Faust"), (Gounod).  
9.9: Banjo solos—Mr. Ken Tullock, (a) "The Baushee" (Grimshaw); (b) "Take Your Pick" (Mandell).  
9.15: Bass solos—Mr. E. J. Johnson, (a) "Kings of the Road" (Bevan); (b) "When the Sergeant-Major's on Parade" (Longstaffe).  
9.22: English concertina duets—Messrs. Theo. and Frances Gunther, (a) "Rendezvous" (Aletter); (b) "Old Folks At Home" (Foster).  
9.30: Soprano solo—Miss Mabel Thomas, "Regnara Nel Silenzio" (from "Lucia di Lammermoor") (Donizetti).  
9.34: Instrumental trios—Christchurch Broadcasting Trio, (a) "Air de Ballet" (Adam); (b) "Presto" (Reissiger).  
9.42: A piano and Mr. Cyril Avondale—"The Street Watchman's Story" (own arrangement).  
9.47: Tenor solo—Mr. David McGill, "Coming Home" (Heyl).  
9.51: Dramatic recital—Mr. J. Birch, "The Pictal of Li Fang Foo" (a story of an opium den), (MS.).  
9.58: Dance music till 11 p.m. God Save the King.

## 4YA, DUNEDIN (463 METRES)—SATURDAY, JUNE 16.

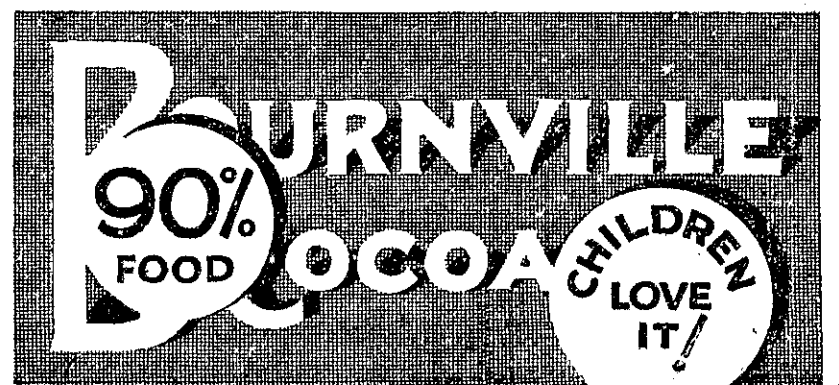
- 2.45 p.m.: Relay of Rugby football match from Carisbrook Grounds.  
5.0: Close down.  
7.15: News session.  
7.30: Address by Mr. Lloyd Ross, M.A. (under the auspices of the Workers' Educational Association)—"Some Modern Plays."  
8.0: Town Hall chimes.  
8.1: Relay of orchestral music from Empire Theatre Orchestra.  
8.11: Contralto solos—Miss Irene Hornblow, L.R.A.M., (a) "Spring Sorrow" (Ireland); (b) "Four Ducks" (Needham).  
8.16: Pianoforte solo—Miss Muriel Caddie, "Intermedi" (Schut).  
8.21: Instrumental trio (violin, cello and piano)—"Maskerade Ballet Music."  
8.26: Baritone solo—Mr. Arthur Langley, "Harlequin" (Sanderson).  
8.30: Violin solo—Mr. H. Riddle, "Gavotte" (Gosse).  
8.33: Relay of orchestra music from Empire Theatre.  
8.43: Soprano solos—Miss Agnes Guy, (a) "Yesterday and To-day" (Spross); (b) "To a Miniature" (Brahe).  
8.45: Cello solo—Mr. P. J. Palmer, "Valse Triste."  
8.53: Bass solo—Mr. Tom Cooper, "The Floral Dance" (Moss).  
8.58: Weather forecast.  
9.1: Instrumental trio (violin, cello and piano)—"Abenlied" (Schumann).  
9.4: Contralto solo—Miss Irene Hornblow, "The Silver King" (Chaminade).  
9.7: Pianoforte solos—Miss Muriel Caddie, (a) "Minuet" (Grieg); (b) "Wedding Day" (Grieg).  
9.16: Violin solo—Mr. H. Riddle, "Cavatina" (Henry).  
9.22: Baritone solos—Mr. Arthur Langley, (a) "Crossing the Bar" (Willeby); (b) "I Know of Two Bright Eyes" (Lutsum).  
9.28: Cello solo—Mr. P. J. Palmer, "Menuetto" (Popper).  
9.33: Soprano solo—Miss Agnes Guy, "Home Song" (Liddle).  
9.36: Instrumental trio (violin, cello and piano)—"Swedish Folk Song" (traditional).  
9.40: Bass solos—Mr. Tom Cooper, (a) "Youth" (Allitsen), (a) "The Company Sergeant-Major" (Sanderson).  
9.50: Relay of orchestral music from Empire Theatre.  
10.0: Close down.

## Sunday, June 17

### 1YA AUCKLAND (333 METRES)—SUNDAY, JUNE 17.

- 3 p.m.: Afternoon session—selected studio items.  
4.0: Literary selection by the Announcer.  
4.8: Selected studio items.  
4.30: Close down.

(Continued on page 14.)



# Mainly about Construction

By "Megohm."

## How to Discover Polarity

**T**HE accurate and speedy determination of the polarity of various accumulators and high-tension leads is often a matter the paramount importance of which cannot be over-emphasised.

In accumulator charging operations the polarity of the accumulator and of the charging board leads must, of course, be known with certainty, for it is essential that the positive terminal of the accumulator be connected up to the positive terminal of the charging-board. If the leads were connected the other way round, the accumulator would be completely ex-

nected up the wrong way round, the exhausted of its residual charge, and injury would occur to it.

### SEVERAL CHEMICAL METHODS.

**SIMILARLY**, the radio amateur and experimenter must always be in a position to determine at once the polarity of his high-tension battery leads. Most high-tension batteries are, of course, at the present moment sent out by their manufacturers with their polarities plainly indicated on the outer casings of the cells, but with home-constructed batteries the case is often different, and the amateur is generally left to himself to determine the polarities of his batteries.

Leaving aside the several physical methods of polarity determination, such as the magnetic polarity indicator, there are a number of reliable chemical means of determining very simply the polarity of any electrical lead.

### A MORE DELICATE INDICATOR.

**I**N the first place, a little dilute sulphuric acid may be poured into a small saucer and the battery leads held in the liquid at a distance of about half an inch apart. Bubbles of gas will immediately be observed to rise from the electrode which carries the negative current. This is shown at Fig. 1.

Similarly, a solution of copper sulphate (blue vitriol) may be prepared, and the wires from the battery dipped below the surface of this liquid. In this case, a deposit of copper will be formed on the negative lead of the battery.

When carrying out this determination, it is best to wrap the ends of the wires with a little tinfoil so that the deposit of metallic copper at the negative pole may be shown up plainly.

These tests work very well when the E.M.F. of the battery or accumulator cells tested is not below three volts, but there are a number of more delicate tests still, and many of these, when carefully applied, will indicate the polarity of a cell when its total E.M.F. is below one volt.

Probably the most delicate chemical polarity indicator is the chemical compound which is known by the name of phenolphthalein. This material takes the form of a white powder. A quarter of an ounce of it should be procured from the local chemist and as much of the material as will fit on a sixpence should be dissolved in a teaspoonful of warm water, together with about three times as much Glauber's salts (sodium sulphate).

### THE USE OF POTATOES.

**A** QUANTITY of ordinary white blotting paper is then soaked for a few minutes in this liquid, and then allowed to dry without any rinsing. The paper may then be cut up into suitably shaped strips.

To use this paper for the purpose of polarity determination all that is necessary to do is to lay a small piece of it on a wooden or ebonite surface, and to moisten it with a little pure water. Bring the leads of the battery on to the moistened surface of the paper and at a distance of about half an inch apart, and a bright pink mark will be evident at the negative lead.

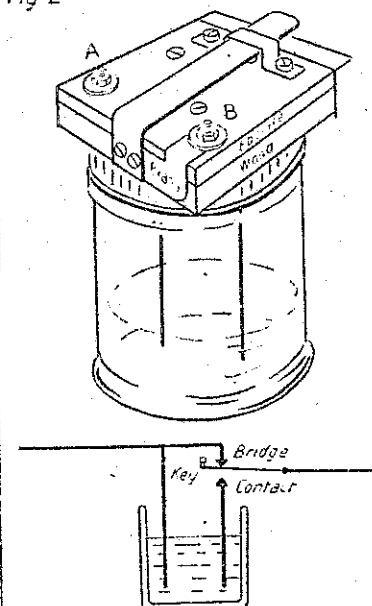
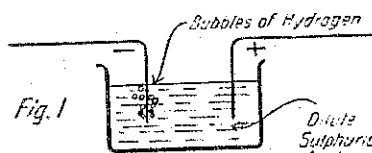
It has been stated that the freshly-cut surface of a potato, an onion, or an apple will provide an effective means of determining polarity, a dark stain being produced at the negative pole of the battery when the leads are held on the freshly-cut surface at a little distance apart. This is a rough-and-ready test, but in many cases it works very well. In others, the opposite result is obtained. Thus it would appear that the chemical or physical make-up of the vegetable

or fruit concerned has a good deal to do with the efficiency of the test. Needless to say, this test is not suitable for determining the polarity of very small currents.

The ordinary "pole-finding paper" which is obtainable on the market is usually composed of absorbent paper which has been dyed with a solution of turmeric or litmus. With both these papers the negative pole of the high-tension battery or accumulator lead exerts a colour change at its point of contact with the moistened paper.

These papers can very easily be made by the radio amateur who has a little time to spare. The turmeric variety of the pole-finding paper is perhaps the better of the two to use. It can be made by soaking ordinary white blotting-paper in a solution of turmeric, prepared by dissolving about a quarter of an ounce of dried turmeric root in half a teaspoonful of a mixture of equal parts of water and methylated spirits. After drying, the paper is ready for use, and when the electrodes of the battery are applied to the surface of the moistened paper a brown stain appears at the negative point of contact.

An ordinary photographic blue print will also make quite a good polarity indicator. For this purpose the blue



Polarity Indicators

print should be moistened slightly with a very weak salt solution. The negative point of contact of the battery with the paper will be indicated by the appearance of a dirty yellow stain. Generally speaking, this test is not very effective when voltages below six or eight are being dealt with.

In all these cases, of course, the colour change effect at the point of contact of the negative electrode of the battery is dependent upon the presence of local chemical action by which the moist indicating material with which the fibres of the paper are impregnated is converted into a different form. Such colour-change effects are well-known in the realms of analytical chemistry, and they form the basis of all the well-known chemical "indicators."

### INSTRUMENT FOR PERMANENT USE.

**I**N conclusion, a very simple polarity indicator may be described. This consists of a piece of glass tubing as depicted in the diagram, Fig. 2. Through the corks which are provided at the opposite ends of the tube are placed two stout copper wires reaching about half an inch inwards.

The tube is then almost entirely filled with a solution of phenolphthalein, made as described above. On attaching the polarity indicator to the terminal of the accumulator or battery, a pink area of liquid will be formed around the negative electrode.

On shaking the tube, the pink colour will disappear, and thus the indicator will be ready for a further test when required.

If the pink colouration is not readily formed, it is a sign that too little of the materials have been dissolved in the water. This can easily be remedied by adding very small further amounts of sodium sulphate and phenolphthalein to the liquid until the colour is formed almost at the instant of connecting up the battery. The exact proportions of the materials necessary for the purpose varies to some extent with the voltage of the current whose polarity it is desired to test. For all average purposes, however, the proportions given above will be found to be entirely suitable, and satisfactory results will be obtained at the first experiment with the indicator.

**A** HANDY form of the above indicator has been devised by "Megohm" for use with chemical rectifiers, and which allows of a test being made at any time by merely pressing a key.

Referring to the illustration, the key arrangement is seen on the top of a small glass jar of the type that is fitted with a metal screw-on lid. A square of ebonite and a square of 3/8-inch wood, both 2 by 2 inches are required. Two holes are drilled in the metal lid sufficiently far apart and large enough to easily clear the electrodes passing through. Other holes are made in the lid, and through these are passed small screws to secure it to the square of wood.

**H**OLES are now drilled in the ebonite, including two for screwing down to the wood. The brass strip for the key is springy brass 5 inches long and 1/4-in. wide, and the brass for the bridge is 1 1/2 by 5-16 inches and bent to leave a space 1/4-in. in height. The bolt B is connected to the key by an L-shaped piece of brass foil or a wire.

All but the key may now be bolted to the ebonite, the two 20's copper wire electrodes being bolted to the nut B and lower contact of key respectively, this contact being a bolt lead. With holes drilled through the wood the electrodes may now be passed through and the ebonite secured in place, the screw holes being clear of the position of the electrodes. Depressions are cut in the upper side of the wood to take projecting bolts and wires on the ebonite.

The glass jar in question is 2 1/2-in. high and 1 1/2-in. diameter.

**T**HE indicator is connected in the positive lead from rectifier to battery, any voltage, at the bolts A and B, and whilst charging, the current only traverses the key, which presses up against the bridge. When the key is pressed, direct connection is broken, and the current traverses the liquid, showing a deep red colouration round the negative electrode, which should be the one connected to the positive of battery.

This arrangement enables a close watch to be kept upon a chemical rectifier with the minimum of trouble.

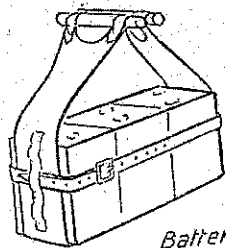
The liquid, which need not be more than an inch deep, is the same as that described above.

### A CORRECTION.

**L**AST week a method was given of obtaining small values of grid bias without a special battery. The diagram belonging to this was inadvertently placed in the article dealing with the shield-grid booster.

## A HANDY BATTERY CARRIER

**A** HANDY carrier that will adapt itself to various sizes of accumulators may be made of leather as shown in the illustration. Wooden sticks are provided to act as handles.



Battery Carrier

## THE SHIELD-GRID BOOSTER

**I**T must be distinctly understood that this R.F. attachment as described last week is only suited for broadcast wavelengths, and not for short-wave. For the latter there will be certain alterations in the unit, and also minor changes in connections in the short-wave receiver. This matter will be dealt with in due course.

### Loudspeaker Breakdown.

**B**REAKDOWN of loudspeaker windings, when connected directly in the plate circuit of the last valve, is due to the surges of current which momentarily pass through them when the receiver is switched off. A super power-valve with a reasonably high plate voltage will pass a current of, say, 10 to 15 milliamperes, and this heavy current will saturate the pole-pieces of the loudspeaker, with the result that slight variations in current through the windings will not produce sympathetic variation in the magnetism of the pole pieces, and the diaphragm or reed will not respond to all the variations in current. Unless the diaphragm faithfully follows these variations distortion is inevitable. The use of a choke filter overcomes these troubles, and also minimises any tendency to low frequency oscillation.

### QUERIES BY CORRESPONDENCE.

1. Every communication enclosing queries is to be addressed to "Megohm," Box 1032, Wellington, and must be accompanied by a stamped addressed envelope for reply by post.
2. Questions must be written so that a space is left in which the reply may be added.
3. No charge is made for replies.



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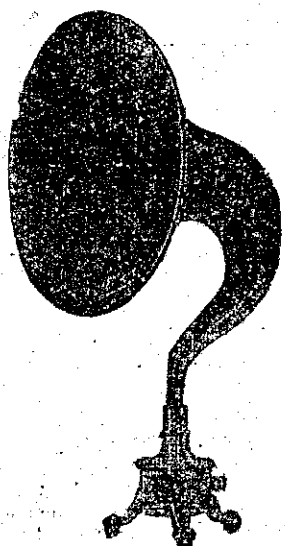
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This is the well-known Ethovox Loudspeaker which has become so popular because it reproduces speech and music with such remarkable purity and freedom from distortion. Its tone is deep and mellow, and it will deal with considerable volume. The demand for this model is so great that we have been able to effect economies in manufacture, and so reduce the price. The instrument is 23 inches in height, and the diameter of the horn is 15 inches. The magnet-system is adjustable. Rubber studs on the feet prevent the loudspeaker damaging delicate surfaces on which it is placed. The graceful mahogany-coloured swan-neck and flared give the Ethovox a handsome appearance.

Ethovox 2000 ohms, with Metal Horn  
Price £5 5s. 0d.

Ethovox 750 ohms, with Metal Horn  
For use in conjunction with  
Power Valves.

Price £5 5s. 0d.

The Ethovox is manufactured by  
Messrs. Johnson & Phillips, Ltd.,  
Charlton, London.

If not obtainable at your Radio  
Dealers please write to the New  
Zealand Representatives—

**Tolley & Son,  
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Electrical Engineers,

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Branches at:

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Large Unit as now fitted in Console Radio  
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# Our Short Wave Corner

MR. F. W. SELLENS (Northland) writes:—

Saturday, May 26.

Big Ben was heard striking 8 p.m. at 6.30 a.m. through 5SW. This was followed, without any announcement, by a man and woman singing. Volume was very weak at 7.25 a.m. when I closed down. An orchestral item was coming through at fair 'phone strength.

PCJJ was first tuned in at 12.45 p.m. All announcements in the early part of the programme were made in a foreign language, Spanish probably, as Mexico City was called several times, and once in English. Mr. Ranger, or Granger, manager, Electrical Company, Mexico City, was asked for a report of reception. Reports were also asked for from other listeners in North America. At 2.10 p.m. the "Wembley Tattoo" was heard at good speaker volume.

2XAD on 21.06 metres was first heard at 12.50 p.m., when they were fair 'phone strength, but very unsteady. Later on volume increased to fair speaker and was more steady. Olive Palmer, radio's most popular soprano, sang, and it was announced that a photograph of this lady could be had by writing for one to the Radio Editor, Palmolive Co., Chicago, Ill. On closing it was announced that a gong would be struck at exactly one minute and ten seconds past 11 o'clock, eastern daylight-saving time. After a slight pause the gong was heard. This is a new idea.

2FC, through 2ME on 28.5 metres, were heard during the evening. Volume was good speaker, but several times they went off the air for a moment or two, and just before 11 p.m. 2ME announced that they were closing down, apparently on account of breakdown, as volume decreased very rapidly before the announcement.

From RFM, 70 metres, a lady was heard talking as well as the usual male speaker.

Sunday, May 27.

2XAF, 31.4 metres, at 2 p.m. was very weak, but was soon strong enough for the speaker. A programme of dance and vocal music was being relayed from the Crystal Room, De Witzler Hotel, Albany, New York. Applause at the end of each item could be clearly heard. They signed off at 3.33 p.m., New Zealand time.

2BO was heard calling "CQ" during the afternoon.

3LO, through 3ME, carried out their second daylight test from 6.15 p.m. till 7.17 p.m.

Several choruses from "Carmen" were heard, a poem by Robert W. Service, the Canadian Kipling, "Barbed Wire Field" was read, etc. Volume from fair, increasing to good speaker.

Monday, May 28.

3LO from 6 a.m. were again testing, but were not up to their usual standard, much weaker and mushy.

At from about 6.10 a.m. on 45 metres a stranger was heard transmitting orchestral items, without any announcement in between. Strength was fairly good, but unsteady.

2BO again calling "CQ."

2ME were transmitting the regular evening programme of 2FC on 28.5 metres. Strength was good speaker. As an experiment I tried them on the broadcast wave and found that with the same number of valves more volume could be obtained than on the short-wave. Modulation was good on both wave-lengths.

Tuesday, May 29.

Between 6 a.m. and 7 a.m. not a sign of any station could be heard. Bed-time stories from 2FC on 28.5

metres at good volume were heard, but suddenly went off at 7.25 p.m.

RFM were louder than they have been for a long time. Talk was all that was heard from them.

Wednesday, May 30.

PCJJ was not audible till about 6.15 a.m., when they were very weak. Volume was much better at 7 a.m., but "surging" was bad. Not any announcements were heard till 7.30 a.m., when a lady spoke. Several more items were heard without any announcement, which is unusual for PCJJ.

5SW also was very weak at 6.30 a.m. When closing down at 7.45 a.m. they were much better.

During the evening 2BH was testing on the 80 metres band. 2BO put on some enjoyable records.

Thursday, May 31.

Was up very early for a while to try my luck with JB (South Africa) but, as expected, could not get anything.

2ME, on 28.5 metres, were testing from 6.30 p.m. till 7.30 p.m. Good speaker at times, but faded very badly.

Friday, June 1.

PCJJ was very weak at 5.30 a.m. and not much better at 6.30 a.m., but improved rapidly after this time.

5SW was poor at 7 a.m., but an orchestral item at 7.25 a.m. was coming through fairly good.

2ME from 6.30 p.m. till 7.30 p.m. were testing. Gramophone records were used at first and later the bed-time session from 2FC transmitted. Reports were solicited from places outside Australia.

RFM was loud, but static very bad. 4NW (Queensland), on about 33 metres, was testing.

A voice was heard on about 35.5 metres, but too weak to get the call.

A New Russian.

ON Thursday, May 31, another Russian station was heard, being logged at 12.30 a.m. on approximately 45 metres. When first heard it was transmitting music, then came "Hullo, Hullo." Radio Laboratory University of U.S.S.R. You will now hear more music and piano item." There was another announcement re radio call letters which was hard to understand, but sounded like RAD2. This was followed by a violin solo. Their programme continued on till 2 a.m. with announcements made between items. In one part of transmission reference was made to musical programme, and that the list would be carried out on Wednesday and Thursday at the same time, which would mean Thursday and Friday mornings, 12.30 till 2 a.m. New Zealand time.

Modulation was very poor at times, but strength was equal to the Russian S.W. station RFM received nightly in New Zealand. Most of the announcements were made in broken English, which at times was quite good. As stated, poor modulation made it very difficult to understand. He closed down with station announcement asking for reports, telegram or letter, and finished up with "Good-night, ladies and gentlemen." Trusting that some other SW fans will hear this station and report. —A. P. Morrison (Brooklyn).

English Nightingale Heard in N.Z.

IT may interest short-wave enthusiasts to know that 5SW, Chelmsford, England, is now fair loud-speaker strength until he closes down each morning at 10.30 a.m. This morning while listening to him at 10 a.m. he announced, if possible, between then and midnight they would

broadcast the song of a nightingale from the woods, and at 10.23 a.m. until 10.30 p.m. the nightingale's song was heard clearly and distinctly.

PCJJ was on the air until 8.30 a.m.; still good volume when he closed down. A lady was doing most of the announcing. In conclusion, allow me to express keen appreciation of the articles contributed by "Megohm." —C.M., Wellington.

Short-Wave Notes From the South.

CONDITIONS still remain good with perhaps one day's bad reception on which static crashes made signals almost inaudible. 5SW, Chelmsford is constant in volume, most of their items about 8 to 8.30 or later constitute some relays apparently from theatres; musical items and speech are received with good modulation. The two New York stations have gone off with me this last week. They, however, were better yesterday. One has not the time to spend always through the day when their transmission is at its best. Occasionally morse will maul KDKA badly. When this clears, however, they come through well. 3LO on 32 metres in their regular Monday morning test last week were simply perfect, easily held and stayed stable without a semblance of surge. This week on their second daylight test on Sunday afternoon, while terrifically loud, the first half-hour they had a constant surging wave which died out later. On Monday morning they were much better, later in the day I lost volume in reception in general, and finally it faded out. After varied mental journeys through the circuit, one came to the conclusion that the trouble was outside the set, which eventually proved to be correct. For convenience sake I have a snap connection to aerial made up of two large brass carpet domes, and although on close inspection everything appeared right, on test it proved not to be so, the lacquer which these fittings are covered with apparently had an insulating effect. After this was put right I jumped back into the old volume. It is really astonishing what little trivial things will prevent a set functioning. To-day (Wednesday) England was coming over exceptionally loud and speech delightfully articulated.

Do you know of any reception in this country of a successful nature from South Africa? If so, it would be interesting to try for them during the All Blacks' visit to the Cape. —R. H. Parker (Invercargill).

[Except for the case of South African reception recently reported in "Our Mail Bag," we believe only Mr. Bell has received South Africa on morse only. Special difficulties of time and direction of wave-travel seem to limit New Zealand reception of African stations. Also see Mr. Morrison's letter elsewhere.—Ed.]

3LO'S SHORT-WAVE TESTS

DAYLIGHT RANGE DIFFICULTY.

Regarding the short-wave broadcast tests by 3LO, Melbourne, it is pointed out that normally, short-wave signals sent over comparatively short distances are subject to marked absorption, and, as a result, they are always much weaker close to a transmitting station, than is a signal transmitted on a longer wave-length. This fact, added to difficulties sometimes experienced in picking up short-wave signals, has prevented their extensive use for local broadcasting. It has been found, however, that the carrying properties of short wave-lengths differ very much from those of longer ones, and that in certain circumstances the daylight range of a short-wave signal greatly exceeds that of a long-wave one.

Normally the daylight range of 3LO on 371 metres does not exceed about 200 miles, and in some cases it is a great deal less. Experiments have indicated that the daylight range of the 30-metre transmitter should be 1500 miles or 2000 miles. This would mean that where the long-wave transmitter could not serve all the Victorian listeners effectively in the daytime, the short-wave set could cover the whole of Australia.

So far the daylight short-wave tests, by 3LO, Melbourne, have failed to give consistent satisfactory loudspeaker volume in Wellington at about 1700 miles distance.

STANDARD TIME

LISTENERS often find it difficult to distinguish between Standard and Local time. For the sake of convenience in connection with railways, telegrams, etc., most countries keep standard time of some particular meridian, which often differs considerably from mean local time. The Standard time of Queensland, New South Wales, Victoria, and Tasmania is the mean of an imaginary place on the 150th meridian. This is 10 hours east of Greenwich, the standard taken in Great Britain. The mean time of Sydney is five minutes ahead of standard time, while the mean time at Melbourne is five minutes behind standard time. The standard time for South Australia is half an hour later than New South Wales, while that of West Australia is an hour later than the Eastern States. The standard time of New Zealand is one and a half hours ahead of Queensland, N.S.W., Victoria, and Tasmania. Therefore 8 p.m. in Sydney, for instance, is equivalent to 9.30 p.m. in New Zealand.

# AUCKLAND DIRECTORY

## What to Buy and Where

ATWATER-KENT RADIO	Frank Wiseman, Ltd. 170-172 Queen Street.
ALTONA & HAMMARLUND-ROBERTS SETS.	Johns, Ltd. Chancery Street.
AMPLION LOUDSPEAKERS	All Radio Dealers.
BREMER-TULLY RADIO	Superadio, Ltd., 147 Queen Street.
BURGESS RADIO BATTERIES,	All Radio Dealers.
CE-CO VALVES	All Radio Dealers.
FADA RADIO	Radio Supplies, 251 Symonds Street.
FEDERAL, MOHAWK, GLOBE	Federal Radio House, 8 Darby Street.
GAROD, CROSLY, RADIO AND ACCESSORIES	The Hector Jones Electrical Co. King and Queen Streets, Hastings.
GILFILLAN AND KELLOGG	Harrington's, Ltd., 138-140 Queen Street.
GREBE RADIO	Howie's, Dilworth Building, Custom St. E.
MARCONI ECONOMY VALVES	All Radio Dealers.
MULLARD VALVES	All Radio Dealers.
RADIOLA RECEIVERS	Farmers' Trading Co., Ltd., 1108000 Street.
RADIOTRON VALVES	All Radio Dealers.
RELANCE BATTERIES	Reliance Battery Mfg. Co., Ltd., 96 Albert Street.
PHILIPS VALVES AND APPARATUS	All Good Radio Dealers,

## POWER TRANSMISSION

### BY RADIO BEAMS.

Great interest and much misunderstanding has been caused by the announcement by the Westinghouse Manufacturing and Electrical Company of America that its research engineers are engaged on the problem of transmitting energy in commercial quantities by wireless, and that a considerable measure of success is expected shortly.

The method being investigated by the Westinghouse Company differs considerably from ordinary wireless communication methods. It involves the use of a wireless beam of about the character as that from a small but powerful searchlight. If such a beam were produced by a transmitter using about as much power as 2YA, Wellington, it is estimated that the air in the path of the beam would undergo a surprising electrical change, and from being one of the most perfect insulating media known would become a conductor of current of the same order as a stout copper cable. In this condition the beam could be used as a transmission line, and two or more beams produced parallel with each other would be capable of replacing an ordinary metallic circuit for the transmission of direct or alternating currents of commercial pressures and frequency.

### Limited Commercial Value.

Assuming that grave technical difficulties to the actual production of the beams are overcome, as they probably will be, the value of the system for commercial purposes would be strictly limited. The wireless beams would employ very short waves, which are subject to rapid weakening as they leave the transmitter. These beams could not be used for more than a few miles, because, even assuming that there were no obstructions such as trees or buildings in their way, the curvatures of the earth would be sufficient to prevent their use over longer distances. In view of the cost of pro-

ducing the beams, they are not likely to be used in preference to metallic conductors for such short-distance transmission, except, possibly, in cases where some insurmountable difficulty prevents the use of metallic line.

## IN SPOKANE VALLEY

### LISTENERS-IN FOR WEST.

The demand of listeners for a diversity of programmes is illustrated in a survey of the radio situation in Spokane, Wash., which has been submitted to Harold A. Lafount, member of the United States Federal Radio Commission from the Far West.

Questionnaires were sent to representative citizens in four sections of the city and in the Spokane valley. The survey was conducted independently of any broadcasting station and is believed to be representative of the radio situation in cities of the West, Lafount said.

Eighty per cent. of the persons answering the questionnaires in the entire city said they owned radio sets. In the Spokane valley, 75 per cent. said they had radios. The percentage of those owning valve sets was 65.4, while 34.6 per cent. have crystal sets.

A census of adults in homes who listened to the radio showed 52 per cent. of the homes had two adult listeners; 28 per cent. three listeners; 11 per cent. four listeners; 5 per cent. five listeners; 3 per cent. one listener, and 1 per cent. six listeners. Forty per cent. of the homes had two child listeners; 34 per cent. had one listener; 19 per cent. three listeners; 5 per cent. four listeners, and 2 per cent. five listeners.

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RADIO SPECIALIST.

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is Passing you by!

KING 5-VALVE NEUTRODYNE SETS, complete with Speaker, Batteries, Aerial Wire, etc. From £30/10/-.  
BROWNING-DRAKE SETS, made to order. Amplifiers, Crystal Sets, Speakers, in large variety.

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The Best Workmanship and the Highest Class Parts goes in before our Name goes on.

ALL GOODS MONEY BACK GUARANTEED.

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Arrange for a demonstration TO-DAY

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JUST ARRIVED — A NEW SHIPMENT OF THE FAMOUS NO. 51

2-VALVE CROSLY

Australian Stations Guaranteed on 'Phone Strength, complete with Valves, Batteries, Loudspeaker and 'Phones.

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OUR NEW PRICE LIST IS AVAILABLE FOR THE ASKING.

## Our Mail Bag

The C. A. Larsen.

I HAVE listened with very much interest to transmissions from the C. A. Larsen whaling ship during the last four evenings beginning on May 24, 1928, Thursday. The announcer on the ship put over several messages to different people, including Mr. Brown. He also stated that he received letters from those people. If Mr. Brown or any other person who was called up reads this, would they please let me know how I can get in touch by letter to the C. A. Larsen. As I have a detailed report for them. The C. A. Larsen's wireless transmitter's call sign is A.R.D.I.—N. C. Fitzgerald, Hastings.

Can Anyone Help.

COULD any of your many readers help me to identify a station operating on about 220 metres, which was picked up in the early hours of Sunday morning (May 27)? The station was transmitting gramophone records and came through fairly loud on three valves of a Brownie-Drake set. The station announcement was given after each item, but was too blurry to be understood, although loud enough. It was probably some "Aussie" or New Zealander testing, as I managed to catch the following:—"... testing, we are going to have another request number." I shall be very glad if anyone is able to identify this station. Your "Radio Guide" to hand, and is really excellent.—S.G.T., Levin.

Names of Performers.

"WAYBACK" condemns the elimination of the performers' names from announcements. What is the announcer for, anyway? Or if you must cut out something, let it be the name of the composer, and not that of the performer. It may be that I am one of a few who are dissatisfied with the present arrangement at 2YA, but I do not think so, and I doubt if it appeals to the artists who take part in the concerts.

The Drop in Licenses.

READ with great interest your article on the 20 per cent. drop in licenses, and am sorry that such is the case, seeing that the Broadcasting Co. is doing their very best to give us the best entertainment possible, and if anyone is not content with the programmes we get from 2YA, well, the only name I could give him doesn't look well on paper. Looking at it from a business standpoint for a crystal set owner alone, if he put down each programme at 1s., it would run out at about 936 shillings per year, and seeing that the whole family, and sometimes friends, listen at the one set, what would it come to for the lot. Let us be reasonable. Now, I think every licensed listener should help the

company as much as possible, to see that there is no thieving going on. Many who run sets without licenses wouldn't like it if you went to them and told them they were thieves, but they are, if they are taking for nothing what they should pay for. I think, if it were possible, it would be a good thing to publish a list of all license-holders in the "Radio Record," as people that take that valuable paper would not mind seeing their name in print, and it would let them know who had a license and who had not. And it might help to stop the thief. All who dismantle their sets should be made to take down their masts. I think, if it was possible, and did not put too much extra work on the Post Office staff, it would be a good thing to issue half-yearly licenses, as it would help those who felt it a bit of a bump to pay the 30s. I think it would help renewals.—Fair Play.

Views of 2YA.

I WAS very interested in the different views of 2YA fading in Hawke's Bay. 2YA fades badly here most nights, and is very mushy for a few minutes at a time. The afternoon sessions are very clear, with no sign of fading, but yesterday (May 31), when 2YA began the usual fading at 4.10 p.m. It is strange that 2YA fades here, as we are practically in a straight line over the sea from Wellington, and only one hill in Lyttelton Harbour to cross. We are 175 miles from Wellington, and perhaps as one of your correspondents says, fading is bad from 60 to 200 miles from a station, and that probably accounts for it. One of your correspondents says 2YA does not fade in Christchurch and is picked up consistently. Well, that is different from what friends in Christchurch tell me. They all say 2YA fades, and it began after Sidney time went out. Even dealers have told me the same thing, so it is not the sets that make 2YA mushy. As to the rebroadcasting of 2YA by 3YA, I much prefer listening to 2YA, as the rebroadcasting from 3YA is usually very noisy and static seems worse. At times 3YA's receiver appears to be pushed to the limit to keep the rebroadcast clear, but even then the transmission fades and goes mushy. I have tuned in the four stations describing football matches on the same day, and there is a different atmosphere when the station that Mr. Allardice is announcing from is tuned in. He puts more life into it, gives a better description, and makes the matches much more interesting to listen to. I have not heard his equal in races or football, either in New Zealand or Australia. I always prefer 2YA's afternoon sessions to the other stations. You cannot hear the gramophone needle scratching on the records. The Sunday afternoon session is most enjoyable, and the orchestra is most enjoyable; it is a delight to listen to.—A.R.G., Purau.

### MELBA ON THE AIR

#### UNFORTUNATE LAND LINE BREAKS

TEST FOR LISTENERS.

ON Wednesday evening, May 30, New Zealand listeners who were "holding" 3LO, Melbourne, or 2FC, Sydney, were treated to vocal items by the world-famed Dame Nellie Melba. It appears that Dame Melba was singing at a concert given in the Lilydale (Victoria) Shire Hall, in aid of the Melba Park at Lilydale. A land-line ran from the hall to 3LO, Melbourne, which was connected by another land-line with 2FC, Sydney. Unfortunately the land-line between Lilydale and 3LO, Melbourne, suffered several breaks, and although some of Melba's items managed to get through the breaks became so bad that eventually the relay had to be abandoned. In Wellington the relay from 2FC, Sydney came through much louder than that of 3LO, Melbourne. Among the performers heard at the Melba concert during the relay was Mr. John Lemmon, the famous flautist. Melba's voice was at times loud and clear, and in an operatic aria she was heard at her best. Melba's home is at Lilydale, where the concert was given.

PROBABLY no place more than radio is the old adage, "an ounce of prevention is worth a pound of cure," worthy of sharp attention. For example, dust is one of the biggest enemies of the receiver. An ordinary paint or typewriter brush is the best remedy. With its variable condensers and other parts of the set may be kept clean, avoiding worries that creep in if the dust is allowed to accumulate.

## NEW ZEALAND OVERSEAS

### AN INTERESTING MAIL BAG

2YA MUCH APPRECIATED.

APPRECIATIVE letters continue to come from across the Tasman. 2YA received a batch of them by the last mail—from Queensland, New South Wales, Victoria, South Australia, and Tasmania, while several came from America (enclosing dimes to pay for a reply, such evidently being the practice in the States). Included in the correspondence was a letter from Chicago.

A Tasmanian Relay.

AN enthusiastic listener in Tasmania expresses his intention of relaying 2YA 45 miles by telephone line in order that friends (ex New Zealanders) may hear: "Being away on the West Coast of Tasmania, such a long distance from your station, you can imagine how pleased I was at getting a New Zealand station so well. "As my wife's people come from Wellington, I intend next Sunday night to try transmitting your station to them over the telephone wires some forty-five miles away as they have not a wireless set, and would be interested to hear their native city."—J.M.E., Tullah, Tasmania.

Warm Appreciation.

"I WISH to congratulate you and show my appreciation of the bright and pleasant programmes which are transmitted from your station. "We have been listening-in to you from approximately 7.30 p.m., Sydney time, until you close down, i.e., about 9 o'clock here, for several nights past, and have been agreeably surprised at the clearness with which the music, etc., has been received. We have a five-valve receiver and work on an indoor aerial."—( ), Manly, N.S.W.

A Breezy Sydneyite.

"B." of Sydney, writes about church broadcasts and the Leckie-Melton boxing match: "My real object in writing you this letter is to congratulate the sporting public of your land on the fair way they treat their visitors—for instance, the fight on Tuesday night (Johnny Leckie v. Billy Melton). Although there was some bad static and slight fading, I never missed a punch (ditto Melton). Melton never looked to have a chance, but from the description I think the referee was a bit sudden, as the count was '5, 6, 7—he's up.' At count of 7 referee declares Leckie the winner. Rather sudden, eh? Or perhaps your referee is more humane than our Joe Wallace, who allows too much useless punishment to be inflicted. Anyhow, good luck to your boy—he is Billy's master any day. "So cheerio, with best wishes to 2YA, for if it were not for you I would have to go to church. As it is, I have you during church hours here—then, by the time you close down, our church services are finished, and I save my 3d. Scotch, eh? Not much!"

### 3LO'S FADING PROBLEM

A SERIOUS DIFFICULTY.

New Zealanders are apt to blame the fading of our broadcast stations to faults in transmission. The Melbourne station, 3LO, which is probably one of the most efficient stations in the world, suffers from severe fading in many areas in Victoria, not to mention those in the neighbouring States. The Melbourne "Argus" reports: From all parts of Victoria, South Australia, and New South Wales, and from many listeners in Tasmania and Queensland, 3LO has received back the forms which were used in the fading and static observations which were held a few weeks ago. It is expected that it will take some weeks to examine all the papers and to draw conclusions from them, but even a brief examination of the papers has demonstrated in a striking manner the need for effective relaying stations in country districts.

A 70-Mile Limit.

The papers have proved that thousands of listeners in the country at times suffer almost the complete loss of programmes through interference from static, while at other times fading and distortions arising from special forms of fading destroy large portions of programmes. Some of the papers show such interference from static that of the test passages, hardly a word has escaped at least one burst of static. Others show large portions of the text lost through fading. It has been made clear by these, and previous tests, that the only way in which the country districts of Victoria distant more than 70 miles from Melbourne can be provided with an effective service is by the use of relaying stations. Nearly 18 months ago 3LO made an application to the Federal Ministry for permission to erect four relaying stations, which would cover most of Victoria, but so far this application has been refused, and in the meantime country listeners are failing to receive an efficient service.

Revenue For Relay Stations.

The revenue in Victoria from 140,000 licensed broadcast listeners affords the proprietors of 3LO, Melbourne, the financial means for providing and maintaining relay stations. In New Zealand, where there are only 40,000 licensed listeners, the financial obstacle is at present too apparent to consider the question of relay stations.

## Programmes Continued

(Continued from page 11.)

6.0: Children's session, conducted by Uncle Leo, assisted by cousins from Beresford Street Sunday School—song service.  
6.55: Relay of service from Pitt Street Methodist Church—preacher, Rev. Lionel B. Dalby; choirmaster, Mr. W. Leather.  
8.30: Relay of organ recital by Mr. Maughan Barnett from the Town Hall.  
9.30: Close down.

2YA WELLINGTON (420 METRES)—SUNDAY, JUNE 17.

3 p.m.: Afternoon session—selected studio items.  
4.30: Close down.  
6.0: Children's service, conducted by Uncle Ernest, assisted by choir from Church of Christ, Newtown.  
6.55: Relay of evening service from Taranaki Street Methodist Church—preacher, Rev. Clarence Eaton, organist and choirmaster, Mr. H. Temple White.  
8.15 (approx.): Relay of band recital of the Wellington Municipal Tramways' Band from His Majesty's Theatre—conductor, Mr. T. Goodall. Close down.

3YA, CHRISTCHURCH (306 METRES), SUNDAY, JUNE 17.

5.30 p.m.: Children's song service, conducted by Uncle Sam, assisted by children from Moorhouse Avenue Church of Christ Sunday School.  
6.30: Relay of evening service from Church of Christ, Moorhouse Avenue. Preacher, Rev. Jas. Crawford. Organist, Miss E. Hepburn. Director of Choir, Mr. H. Ames.  
7.45: Musical items from studio.  
8.15 (approx.): Rebroadcast by relay of 2YA, Wellington (concert by Municipal Tramways Band from His Majesty's Theatre).  
God Save the King.

4YA, DUNEDIN (463 METRES), SUNDAY, JUNE 17.

5.30 p.m.: Children's song service, conducted by Big Brother Bill, assisted by children from the Trinity Methodist Sunday School.  
6.30: Relay of service from Knox Church. Preacher, Rev. Tulloch Yuille, M.A., B.D. Organist, Mr. W. Paget Gale.  
8.0: Studio concert.  
9.15: Close down.

## Glossary of Wireless Terms

UNDER this heading we will give regularly sections of the glossary of wireless terms which is a prominent feature of the N.Z. Radio Listeners' Guide. In that book, although set in the smallest type, it occupies some 13 pages, and is definitely in our opinion the most comprehensive and complete glossary on modern lines which has been made available in the Dominion. For the benefit of our readers the glossary will be reprinted in our columns.

**AERIAL, LOOP OR FRAME.**—This type of aerial is wound on a frame which may rotate or orientate. An "earth" connection is not necessary when a loop or frame aerial is used, although in some cases it can be added with advantage. Its chief advantages are portability and freedom from "jamming" or interference by reason of the fact that it is more sensitive in receiving signals from the direction in which it is pointed, although, for instance, if it were pointed north and south it would receive equally well from both directions, while signals coming from east and west would be weak or inaudible. A good loop, or frame, aerial is only about one-twentieth as efficient as a good outdoor aerial.

**AERIAL TUNING INDUCTANCE (A.T.I.).**—The variable inductance, or tuning coil, in circuit with the aerial, which enables the wavelength of the aerial circuit to be altered or tuned. The greater the wavelength desired, the greater must be the portion of the A.T.I. included in the circuit.

**AIR GAP.**—Describes the space between the magnet pole faces and the diaphragm in telephones or loudspeakers. Careful adjustment of this air gap often results in a considerable improvement in both signal strength and quality. May also refer to the gap existing between the electrodes or points across which discharges take place in lightning arresters.

**ALTERNATING CURRENT.**—The house-lighting system most commonly used in New Zealand. It derives its name from the fact that its direction alternates so many times per second. The standard in New Zealand is 50, but the old Wellington system employed 80. The current builds in one direction from zero, and having obtained a maximum, falls to zero and then reverses in direction, building to a maximum and again reduces to zero. Such an impulse with its reversal is known as a cycle. Hence standard alternating current in New Zealand is said to be of a frequency of 50 cycles per second.

**AMMETER.**—An ampere meter, or instrument for measuring in amperes the current flowing in an electric circuit.

**AMPERE.**—The standard unit of electric current, being the current that can be driven through a resistance of one ohm by a pressure of one volt. If the terminals of a single 2-volt accumulator cell are joined by 14 yards of No. 28 S.W.G. copper wire, a current of one ampere will flow in the wire; or in other words, the resistance of such a wire is 2 ohms.

**AMPLIFIER.**—May be applied to a valve or valves, or a combination of valves coupled together for the purpose of amplifying or magnifying electrical effects. Amplifiers may be either "radio" ("high") frequency, or "audio" ("low") frequency. The former magnifies the electrical impulses before they reach the detector valve (or crystal), and the "audio" amplifier magnifies the output from the detector. H.F.: High

frequently, or radio amplifier. L.F.: Low-frequency, or audio, amplifier.

**ANODE.**—The electrode or terminal of the output circuit of a valve. It is commonly known as the "plate" of a valve. The "B" battery positive (or "plus") terminal is always connected to the anode.

The term "anode" is most frequently used in contra-distinction to "kathode" wherever two electrodes are used as in a battery or other electrical device. The anode is always the positive and the kathode the negative.

**ANTENNA.**—Another term for "aerial." It is generally used in the American parlance.

**APERIODIC.**—A circuit so heavily damped as to be responsive to a wide band of frequencies and to have no sharply defined peak or optimum point, is said to be aperiodic.

**ARC.**—The passage of electricity through air or gas in the form of an intensely hot and visible discharge, consisting of vaporised particles of the electrodes between which the discharge takes place.

**ARMSTRONG CIRCUIT.**—A super regenerative circuit capable of remarkable results in experienced hands. Consists essentially of a reaction coil, either tuned or untuned, placed in the plate circuit of the detector valve and coupled back to the grid circuit. This well-known principle is known under other names in other countries where it was separately discovered. Armstrong is the American name.

**ATMOSPHERICS.**—Generally applied to the atmospheric electrical discharges also termed "static." When intense, serious interference with radio reception is occasioned, especially as there is no definite wave-length. So far no device has yet been invented which is of a form suitable for use by the general body of listeners to reduce interference by atmospherics without proportionately reducing signal strength other than by the use of a loop aerial and this is of questionable value in many instances.

**AUDIO FREQUENCIES.**—All frequencies corresponding to vibrations audible to the human ear. Frequencies less than 10,000 cycles per second are termed "audio frequencies." The frequency of the sound waves produced by the middle C on the piano is 256. A frequency of 1000 per second corresponds to the sing of the mosquito. The upper frequencies approaching 10,000 therefore correspond to the overtones which characterise a banjo as distinct from a piano for instance.

**AUDION.**—The name first given in the United States to the radio valve of the three-electrode type now commonly in use. Originally a trade name it was adopted into common parlance all over the English-speaking world until about 1928, when the word "tube" was adopted in North America and "valve" in Britain and the other Dominions.

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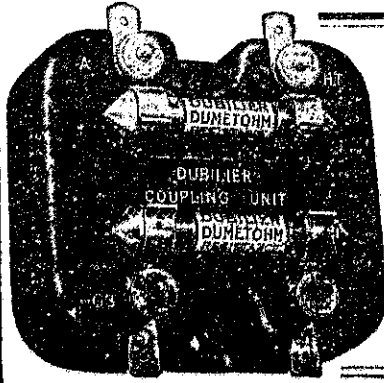
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# NEWS FOR THE CHILDREN

## THE MYSTERY OF THE OUTLAWS' HUT

(By Peterkin.)

MANY years ago, the outlying districts in Victoria, the smallest of the Australian States, were troubled by the doings of several gangs of bush-rangers. One particular county had been visited more than once by a gang of three men, and many a farmer's most valuable horse had disappeared in broad daylight.

The police seemed powerless to effect a capture, for once the outlaws entered the bush it was a hopeless task to find them. The chief of the district police force, Sergeant Grey, was at his wit's end to know what to do. Once he had tracked one of the outlaws to a hut in the heart of the bush, but when he entered the tumble-down shack he was surprised to find that it was empty. There wasn't a living being within it.

Grey's son Dick, a fair-haired, bronzed youth of seventeen, had often asked to be allowed to assist the police, but his father usually smiled at his son's eagerness to help.

"What could you do, Dick?" he asked, when his son again requested to be allowed to take part in the search for the men. "If experienced officers fail in the task, what could a youth of seventeen do?"

"I don't know, exactly," answered Dick, "but I'd like to tackle something difficult just to see what sort of a job I would make of it."

Grey looked thoughtfully at his son. Dick seemed so earnest he almost felt tempted to accede to his request.

"You understand," he said, "that you would be taking on a dangerous task, and that you would be pitting your wits against men who are noted for their cunning and daring."

"Yes, Dad, I do," was the steady reply. "Won't you let me help?"

Dick looked so pleadingly at his father that his wish was granted.

"And what do you think we should do?" continued Grey, a twinkle in his steady blue eyes.

Dick was in too serious a mood to realise that his father was joking.

"It seems to me," he began, "that there is something queer about that hut you told me of. Let me pay a visit to it. I might pick up a clue, and I wouldn't be recognised if I stumbled across anyone. You are too well known, Dad."

Grey looked across the veranda at the rapidly darkening bush. From the bluegums came the noisy chatter of magpies. His joking manner had disappeared when he turned to his son and said:

"Dick, I will do as you suggest. Let's talk it over."



MORAY PLACE SCHOOL DRUM AND FIFE BAND.

This is the Moray Place School Band, with their bandmaster, Mr. E. Hunter. The boys are wearing their new uniforms, of which they are specially proud. The Band is a popular item in the Children's Session at 4YA.

Just before 10 o'clock on the following morning Dick approached the outlaws' hut. He looked a typical sun-downer. Slung across his back was a tent, from the end of which hung a well-blackened billy, while his grimed face was shaded by an old felt hat.

With a slow, heavy step he walked up to the hut. The knowledge that a few chains away, his father and two mounted police were waiting, gave him confidence, and the two revolvers in his hip pockets helped him to carry out his task.

"Good day," he called to a rough-looking man seated within the hut. "Got a drop of boiling water to make a billy of tea with?"

"Fire's out," was the gruff reply. "Dare say I could fix you up if you wait a bit."

Dick threw his swag on the doorstep, sat on it, and mopped his face with a dirty red handkerchief. Round his head a swarm of flies buzzed.

"Come far?" the man asked, eyeing him suspiciously.

"Yes," answered Dick, surveying the interior of the hut. "Gipsland way. Had a row with the boss. Tossed up my job. Think I'll make up towards Midura. Do a bit of fruit-picking."

The outlaw grunted, threw some bark and sticks on the fire, and hung a

## Children's Sessions for Next Week

AT 1YA.

TUESDAY, June 12.—Uncle George with us again with some good Maori stories. Cousins playing violin solos, piano duets and solos.

WEDNESDAY—Hello! Uncle Tom. Plenty of laughs for us tonight? Rather, and singing from some little cousins.

THURSDAY—Good news for us tonight. The Bayfield Choir here and we all enjoy their singing. Peter Pan with stories and birthday greetings and conundrums for the Choir to guess.

FRIDAY—Nod will conduct the session and send birthday greetings and answer letters. Also recitations and musical items from some little girls.

SATURDAY—Three cheers! The one and only Hobo here to amuse us again. Listen for the names he gives the radio animals. Lots of fun with Hobo in charge. Cinderella will send birthday greetings and answer letters.

SUNDAY—Children's Song Service conducted by Uncle Leo and assisted by cousins from Boreford Street Sunday School.

AT 2YA.

MONDAY, June 11—Now children, get ready pencils and paper. This time the Queen Margaret College will be in the studio to sing to us. I wonder will they do the puzzles, too.

TUESDAY—"All seats, please." Conductor Stewart is very busy even on the radio express. Big Brother is employed looking after his pals from the Trinity Methodist Sun-

can of water over the flames. Dick was just beginning to wonder where the other two members of the gang were, when he noticed that in front of the fireplace, instead of the usual clay hearth, was a flat slab of stone. To his astonishment the stone began to tilt upwards and a man's head and shoulders came into view.

"All right, Bill," he called below; "Only a swagger."

The next minute he climbed up into the hut, quickly followed by a third man.

"How did you find your way here?" he asked Dick, as he lowered the stone into position. "A bit off the track, aren't you?"

"I was looking for water," answered

day School, who are going on the trip. "All aboard, please."

THURSDAY—Auntie Dot has 60 little imps under her power to-night, each one a minute. One by one they shall be sent forth through the blue; merry little fellows, and as each one laughs he scatters joy, for every silver piece of that laugh finds its way into some home. Miss Lee's pupils, too, know the secret and carry the little image of joy.

FRIDAY—Uncle Ernest and his tales of far away lands. Life in other countries. We think the Technical College party might like to investigate into these lands of Romance, so Uncle Ernest will take them.

SATURDAY—Auntie Dot and Uncle Toby, and the pupils of Miss Marie Petersen. Songs of delight and joy, with hitting melodies that you will find irresistible. Stories—greetings and lots of fun.

AT 3YA.

MONDAY, June 11—Uncle Jack arrives with a host of fresh stories and songs, so gather around and be ready to enjoy yourselves to-night.

WEDNESDAY—Uncle Peter and Mother Hubbard with their chippy songs and stories and their little helpers will keep you amused and happy for an hour before toddling off to bed.

THURSDAY—"How-do-you-do Every-body?" says Chuckle and Aunt Pat. To-night you are going to hear all about the "Spring Song," and a group of young singers from the Woolston School will help to make a merry bedtime hour.

FRIDAY—"Big Brother" and "The Captain" at the helm to-night—so prepare for a jolly voyage in our

3YA children's ship. Music, songs and recitations, and a Heave-Ho-Hearty!

SATURDAY—Uncle Sam back from his holiday—so ye'll give him a real good welcome. Aunt May with a stirring piano march, and some more competition winners, pupils of Mrs. Enid Frye.

SUNDAY—The children's Sunday hour—the song service. Uncle Sam in charge, and the hymns will be sung by the scholars from the Church of Christ Sunday School.

AT 4YA.

TUESDAY—June 12—Boys and girls come out to play With Big Brother Bill of 4YA. Some girls will sing, some boys recite.

We're going to have splendid fun to-night. There's Little Ray with his violin, Jack on the piano to play will begin, Lenore the funniest piece will recite.

And Eric is going to sing to-night. Come out to play, come out to play. With Big Brother Bill from 4YA.

Things you don't know and stories to thrill, That's the ticket from Big Brother Bill.

FRIDAY—Have you ever heard Big Brother Bill and Aunt Sheila swapping riddles. No? Then you have certainly missed some fun. They do it every Friday night. Have you been elected to their radio family? No? Then listen-in to hear how they do it... and laugh. Miss Anita Winkle's Entertainment Party to-night, and letters, stories, birthdays, and everything.

## THE NEW MUSICAL AGE

### WIRELESS HELPING IT ON

Four hundred years ago Germany had in Charles the Fifth an emperor who loved music, who would sit in his private apartment behind the high altar beating time and joining in the harmony till a friar chorister made a mistake, when the emperor would break off and roar, "You red-headed blockhead!" and long for better choir-men.

To-day a king of German conductors, Dr. Furtwangler, signs again for better singing, and the other day he said to an English choir, the Newcastle Bach Society, after their splendid performance at Frankfurt, "Tour the whole of Germany and teach the Germans how to sing!"

There can be no doubt that Great Britain is entering upon a new musical age. Wireless and the gramophone are helping to cultivate taste, but the tide had begun to swell before their coming.

The springs are the splendid choral societies, the glee clubs, the church and chapel choirs, the school singing, and the wonderful rise and development of community singing. All these forces are making the land ring with tuneful music, and the frenzied horrors, crash, crash, and harrowing discord of certain modern composers are powerless to check the love of the beautiful of the multitude of common folk. It is some consolation for the noise of the jazz mob that the true music is more and more popular.

Is this splendid change a development or a reversion to ancestral habit? Three centuries ago the British not only sang and played better than their Continental neighbours, but had better music, and it was their own. In Tudor days and later everybody could sing and play at sight. Drake took his music men round the world with him.

Choirs and orchestras at home to-day are rediscovering the English music of those days, and beautiful, gracious, and alluring it is. We know by actual proof that those old Tudor and Stuart times really were melodious. Even the Bluebeard king, Henry the Eighth, was no mean musician and composer, and Elizabeth, his daughter, was credited with singing and playing charmingly, though her selection of instruments for a musical dinner, 12 trumpets, two kettledrums, with fifes, cornets, and side-drums, makes us rather tremble at the thought of some of her programmes. How should we like them from 2YA?

Old writers say that the preservation of the lovely choral music in cathedrals and churches is due to the musical proficiency of the Tudors.

## A MEETING IN TWO HALVES

IT is a commonplace that the world grows smaller every day. But it has seldom done so much shrinking in an hour or so as it did the other day when the British and American Institution of Electrical Engineers held a joint meeting by wireless.

The British Institution met in its council chamber on the Victoria Embankment, London, and the American Institute in the Engineering Society's Building in New York, where 1000 members were assembled from all parts.

ON the table in either room was a microphone, and high above it were two loudspeakers. The English microphone communicated by land wires with the wireless transmitting station at Rugby, and then with the American receiving station at Houlton, Maine, whence land wires reached the American loudspeakers. The American microphone, on the other hand, communicated with a transmission station at Rocky Point, Long Island, and then with the British receiving station at Cupar, in Fife, and the London loudspeakers. The wireless waves across the Atlantic covered 3000 miles and the land wires 1200 more.

COMMUNICATION was opened with a "Good morning" from New York, where it was morning, and a "Good afternoon" from London, where it was afternoon. Then the voice of Mr. Gherardi, president of the American Institute, came through the loudspeakers saying that it would give his American colleagues great pleasure if Mr. Page, as president of the British Institution, the senior society, would act as chairman.

MR. PAGE replied that he felt the invitation to be a great honour, and forthwith took the chair in the London room. The chair in the American room necessarily remained empty, for human bodies cannot yet be in two places at once, like human voices; but a portrait of Mr. Page was promptly flashed on to a screen immediately above it.

Each speaker, as the chairman called on him, was represented in the room in which he was not himself present by the prompt appearance of his photograph on the screen. There was laughter at both ends when the chairman in London, in calling on the mover of the principal resolution, said, "We are delighted to have with us, in New York, General John Carly, past president of the American Institute." It is difficult to imagine any limits to the usefulness of this new form of conference. Everybody feels the need of more frequent meetings of the Imperial Conference of the King's Dominions, but distance has always stood in the way. Why not conferences by wireless, at least to prepare the way?

congratulations, but it was a much more excited youth who, a few weeks later, received a very important-looking letter from Melbourne, which, besides containing a letter from headquarters commending him for his courage, also contained a cheque for £50.

## THE FIDDLE THAT PLAYS ITSELF

A SONATA by Cesar Franck was played the other day in Paris on a wonderful mechanical violin.

This violin has been made by two French engineers, who have been working for ten years on its development. It has a number of keys which press the strings like the left-hand fingers of a player, and a revolving bow which can not only touch any string, but can allow of different degrees of pressure. It is driven by two motors, one of which takes the place of the player's arm, the other imparting the swift movements of the wrist.

The mechanical fiddle plays with an uncannily human touch.

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## Great Reception Radio's Influence

### 138 STATIONS ON TWO VALVES

#### GOOD WORK IN BROOKLYN

##### SOUTH AFRICA HEARD.

MR. A. P. MORRISON, Brooklyn, writes: This last week or two I have read with interest lists of stations logged by different radio listeners throughout New Zealand, and think my little list might be of interest.

Mr. Ellis asks who is the five-valve DX champion of New Zealand. Some time ago lists and lists of stations logged were published in your paper of radio fans with 5, 6, 7, 8 valve receivers and some good lists too; one list in particular from Shannon.

My outfit is only three valves, and I get plenty of fun out of it without going up to 5 or 6 valves, and I might say the third valve is never used, unless the loudspeaker is handy, so take notice, fans, only two valves are used. Now to tell the tale (nothing but the truth), and no imagination attached to it, not wanting to be classed a Walter Rodman Pierce (the American DX champion). Without boasting, I have circled the globe with this receiver—New Zealand, Australia, Japan, America, Canada, Manila, India, France, Germany, Russia, Java, England, Argentina, Holland, Belgium, South Africa have all been heard. It is an old American type of circuit, with one or two alterations I have made myself. The earth used is a common garden one. Locality counts nothing, for the receiver has been worked in the city and different parts of Wellington. My list of stations to date is:—

New Zealand.—1YA, 2YA, 3YA, 4YA, 5ZQ, 2YK, 2YB, 1ZB, 1ZQ, 2ZF, 2YM, 4AK, 4ZB, 2AQ.  
Australia.—2FC, 2BL, 3LO, 2AR, 4QG, 7ZL, 5CL, 3VZ, 3DB, 6VF, 2BE, 2GB, 2KY, 2HD, 2UE, 7BN, 2UW, 5MA, 5DN, 3BY.  
Japan.—JOCK, JOAK, JOBK, JIIB.  
America.—KFXF, KFAB, KFI, KGO, KFON, KGW, KJR, KOA, KPO, KSL, WAGH, WBBM, WJR, WEAF, WGY, WLS.  
Canada.—CFCF.  
Manila.—KZRM.  
India.—7BY.  
Argentina.—RCBS.  
Short Wave.  
England.—5SW, 2NM.  
Holland.—PCJJ.  
Belgium.—Radio Belgique, 4A.C.  
Germany.—AFK, RSR.  
America.—2XAF, 2XAD, KDKA, 2XAL, 4XG, 2XG, 5X1, 8XAL, 1XAE, WJW.  
Java.—ANE.  
Russia.—RFM.  
Australia.—3LO, 6WF, 6AG, 2ME, 2BL.

The list above totals 81, and including 57 New Zealand and Australian amateurs I have received, makes my grand total 138 stations, using only two valves.

My best reception, I should say, on the broadcast band is logging WBBM, Chicago, WEAF, New York, WGY, New York, CFCF, Canada, 7BY, Bombay. The Bombay station was logged

### BUILDS NEWSPAPER CIRCULATIONS

#### TREMENDOUS SPREAD OF POPULAR KNOWLEDGE

ONE of the most interesting articles we have encountered for some time is a careful analysis in a trade newspaper journal, "Editor and Publisher," of the causes which have operated to influence a tremendous expansion in newspaper circulations for the last seven years in the United States. Fortunately facilities for accurate statistics are readily available, thanks to the efforts of the Press, supplemented by a Federal requirement that authentic circulation figures shall be published regularly. This analysis is extraordinarily interesting, and attributes to radio a vital part in the expansion of circulation that has taken place.

During the six years' period 1921-27 the circulations of morning papers in the United States increased from 10,144,260 copies per day to 14,145,823. Evening paper circulations increased from 18,279,480 to 23,820,933. Sunday circulations increased from 19,041,413 to 25,469,037.

These gains show that morning papers increased 30.4 per cent., evening papers 30.3 per cent., and Sunday papers 33.2 per cent. The tendency throughout has been for the cheaper papers to disappear and the price of the 2-cent papers to grow to 3 cents. This keeping pace with a much improved service given by the papers themselves in news and information.

THIS increase in newspaper circulation has far exceeded the normal rate of growth of the population, and

last January when I stayed up to hear an early morning test for the short-wave station 5SW.

The wonder station, KFON, California, is heard quite distinctly by me, using detector alone. To test his strength through Wellington 2YA (I do not use a wave trap) last Sunday night, I could distinctly hear the jazz items and announcements made. Two items announced were "One Summer's Night" and "Smiling." The only time I have heard anything from South Africa was on the s.w., when I heard a carrier wave, when, and after writing for some time, heard it announced 2AM or 2M, South Africa, and the station closed down.

This last month I have stayed up late some nights, thinking the Johannesburg s.w. station JB might be logged. I have tried all his wave-lengths, but no results, so I suppose we will have to wait for cable news for All Black results. It is only just lately I have troubled to send reports to some of these distance stations I have received to verify reports, and my reason for doing so is to convince people who doubt DX reception on so small an outfit. But still I have had witnesses at some of my American receptions on the B. band. I do not consider it is necessary to have a five or six valve receiver for DX. It just requires plenty of patience and care in operation, and not interfere with your neighbours' reception.

in searching for the causes of this expansion, credit is given to radio in respect of 45 per cent. of the increase—the other 55 per cent. of the gain being attributed to the development of pictorial illustration and other mechanical and technical improvements in the Press itself. This tribute of the leading trade journal of the Press to the value of radio as a feature of newspaper prosperity is striking—so striking, indeed, as to make the quotation of their reasons worth while.

"The article says: 'Coincident and running concurrently with this increase in circulation for the period 1921-27 has been the introduction and development of radio broadcasting. The universality of its audition plus the instantaneous distribution of its programmes introduced a factor of literacy or stimulation of mental interest whose power and extent can not be tabulated. Owing to the brief time broadcasting has been in existence the ratio of its value can only be approximated and this only through weighing the known factors and assigning the balance of the percentage of increase to broadcasting.'

"There can be no question but that the programmes have increased both in extent and character. The first programmes were confined to entertainment in which jazz predominated. These have been subordinated. Today the most popular programmes are symphony concerts, classical and semi-classical music, talks on historical, educational, religious, and instructive topics, outlines of national and international politics, and lectures on domestic economics.

"As the mechanics of broadcasting are based on audition it does not seem unreasonable to assume that this stimulated interest or increased degree of literacy seeks the printed word to satisfy the mental desire which has been aroused. As the quickest, most general and cheapest reading vehicle, the newspaper follows with the first and greatest reaction resulting in an increase in newspaper circulation.

"There are undoubtedly other contributing factors such as compulsory education in certain States, especially where there is a large element of foreign-born population. Also, the reduction in the working hours and increase in speed of transportation makes available more time for reading.

"As noted above, there have been very definite increases in magazine and periodical circulations, also in the sale of books and the character of books.

"Arbitrarily assessing the broadcasting factor, it would seem to justify the statement that this new factor is one of the most important elements affecting newspapers and newspaper circulations which has been developed in the past century.

"If the theory outlined above is true it is obvious that newspapers have a very definite community of interest with radio broadcasting rather than a somewhat general antagonism which seems to exist on part of many publishers.

"The theory has been discussed with a number of publishers in various sections of the country, some of whom operate broadcasting stations, with the request that they supply any data or information which will serve as an explanation for the circulation increase. The majority of opinions so far expressed ascribe a large portion of the circulation increases to the radio broadcasting."

SUPPLEMENTING the foregoing, it is pointed out that the heaviest increase in newspaper circulations has taken place in those States which are best served by radio stations. Some newspapers themselves maintain broadcasting stations—the "Chicago Daily News," for instance. For the past two or three years this paper has given in its Saturday issue a special page to some country or special educational feature, and on the same evening a talk on the subject from its broadcasting station. This double-barrelled effort has proved extremely popular, and has influenced a definite increase in circulation.

The facts here given have a special interest to New Zealand, as it is certain the course of development here will follow the factors that have influenced development abroad. There has been a tendency, we think, in New Zealand journalism to regard broadcasting as a prospective enemy—this was the first trend in the United States, but, as outlined above, fuller experience has shown that broadcasting has been the best friend imaginable to the newspaper world, and has definitely contributed to its expansion and prosperity. Appreciation of this point will be an advantage in the Dominion.

ANOTHER aspect of interest is the contention made in this analysis that the first tendency to utilise broadcasting in an orgy of jazz has passed, and that the demand of the public is now for symphony concerts, classical music, talks on historical, educational, religious, and instructive topics, outlines of national and international politics, and lectures on domestic economics.

THE proper control of "A" battery current plays a big part in the quality of tone. If for instance, the "A" battery current is allowed to fall below the required strength for heating the filament of the valves, shrill music or speech is sure to be the result. It will be often found that the employment of the "C" battery in the grid circuit of the valve provides a means of improving the tonal quality of some types of receivers, but this largely depends upon the nature of the circuit in use.

## "What Broadcasting Means to Me"

### SPIRIT OF ADVENTURE RESTORED

#### CONFESSIONS BY ORDINARY LISTENERS

A COMPETITION was recently held in Britain for the best short essay on "What Broadcasting Has Meant to Me." Many thousands of entries were received, and the work of judging the three winners was a difficult one.

EXTRACTS from the two first prize winners are worth quoting:—The winner of the first prize writes: "I live in a dull, drab colliery village, as far removed from real country as from real city life—a bus ride from third-rate entertainments and a considerable train journey from any educational, musical or social advantages of a first-class order. In such an atmosphere life becomes rusty and apathetic. Into this monotony comes the introduction of a good wireless set and my little world is transformed. Music, grave, gay, sparkling or haunting, floats through the house, excluding all environments and all dull thoughts."

"This winning essay pictures vividly the deadening sameness of life in a grimy North Country village and the blessed outlet which broadcasting means to those who must face it, month after month.

"MORE than all," goes on the writer, "broadcasting has renewed and increased my admiration for my native England, its religion, its morals, its high standards. . . it makes me feel that each of us is at least a tiny link in the living history of a mighty race, wide-flung to the extremities of the earth. It has turned a telescope upon 'self,' through which I might gain a right perspective. Week by week we hear appeals for individuals, institutions, suffering in every shape and form, and I am brought to realise that I am not a well-known person in a small community only—but an atom in a mighty system, with mighty responsibilities." The winner of the second prize is a bedridden inmate of a poor-law infirmary, who, in nineteen years, has only been taken four times outside its walls. "How often have I wished to die during those years of solitude with pain, suffering and death around me. . . I am quite content now to live another nineteen years under the same conditions as I do now, so long as I have my set, which is very precious to me." The third winner holds that "Broadcasting has restored to me the lost spirit of adventure and self-entertainment. . . broadened my outlook on life. . . my mind has recovered a good deal of its former elasticity."

#### 1YA MUSIC COMMITTEE.

##### SUGGESTIONS MADE.

THE second meeting of the 1YA Musical and Dramatic Committee was held at the Auckland studio of the Radio Broadcasting Company on Friday, the 1st of June, 1928, at 8 p.m. The meeting was presided over by Mr. Karl Atkinson and was well attended.

A letter was read from the General Manager of the Broadcasting Company, outlining the Company's views on the proposed competitions and mystery night.

Considerable discussion ensued on the question of running a competition, and it was decided to limit this in the first instance to vocalists only, an eliminating test to be conducted at the studio, and only those selected by the judge to be broadcast. A sub-committee consisting of Dr. Kenneth Phillips and Mr. Karl Atkinson was appointed to arrange details.

The committee's suggestion that a half-hour's gramophone review be held once a fortnight had been adopted by the Company, and these recitals will be introduced in the near future.

Further discussion ensued on the question of the Mystery Night which was originally proposed at the last meeting, and it was decided to recommend to the Company to run two evenings of this nature, the first evening the item to be announced and the listeners to guess the name of the artist rendering the item, and the second evening the artist's name to be announced and the listeners to guess the name of the item rendered.

A series of programme suggestions brought forward by Dr. K. Phillips were discussed in detail, and it was decided to recommend to the Company that one programme per month be compiled on a definite scheme of musical composition. This was followed by the adoption of a motion by Dr. K. Phillips that a classical night should be devoted to the broadcast of English composers in chronological order.

It was further proposed and carried, that the Company should be asked to include on one Sunday per month, an especially selected programme of electrical recordings of the world's greatest artists, the programme to follow the usual church service, and the programme to be selected suitable to Sunday evening.

The Company's Director of Music, Mr. W. J. Bellingham, attended the meeting and outlined the Company's viewpoints on various matters, and it was decided to meet again on Friday, the 6th of July, at 8 p.m.

## Notes from Auckland

(By Listener.)

ILLUSTRATIONS and particulars of Wellington's "radio car" have aroused much local interest, and all who suffer in Auckland and suburbs from the varied types of preventable interference with reception are anxious to hear of the results of an excellent step on the part of the P. and T. Department. A similar travelling equipment could render useful service here, but it must be admitted that the interference question is far less acute than it was twelve months ago, when the night was made hideous as soon as the local station closed down. One hears an occasional howler nowadays, but the pandemonium of the past is gone, and gone for ever, one hopes. Still, there is much "man-made static" which might be obviated. The warships in port are very considerate during broadcasting hours, but occasionally the exigencies of the service demand that they should interrupt. Vacuum cleaners and violet ray apparatus are frequently operated at night in some districts, and leaks on power lines cause a disturbance at times. This is immediately remedied if reported, for the power board officials, most of them keen listeners themselves, are ever ready to attend to complaints of interference with reception.

FOR the first time in Auckland, if not in New Zealand, the aid of broadcasting has been sought, and has been instantly given, in the tracking down of two escaped prisoners from Mt. Eden gaol. On Tuesday evening last descriptions of the two escapees were sent out from 1YA, and though no connection with this announcement is traceable, one of the two was captured next day. The utilisation of the station shows yet another avenue in which our radio service can serve the community, and the fact that the whole countryside can almost immediately be supplied with the description of a criminal should in itself be a deterrent of any future attempts at escape.

THE Auckland Listeners' League is to hold its annual meeting on the 25th instant. Formed just over a year ago, to replace the moribund Amateur Radio Society, the league quickly secured a membership of over a thousand, due largely to the fact that its membership fee was only a modest shilling. Unlike other societies, it does not hold regular monthly meetings for its members, nor does it arrange technical lectures which attract enthusiasts in other centres. At the forthcoming annual meeting it is expected that such questions as the Dominion Radio Advisory Board and the allegedly high prices of radio apparatus will loom large.

BACK again at the 1YA microphone is Mr. Cuford Bell, whose clarity in announcing is commented upon by the farthest DX listeners who pick up the Auckland broadcasts.

LAST Wednesday's Town Hall concert by the Municipal Band and assisting artists provided a most enjoyable programme. Band music is as popular in Auckland as are the renderings of the orchestra in Wellington, and though the acoustic properties of our Town Hall are not all that they might be, the relay was perfect. It is noticeable that vocalists sound even better when relayed from the hall than when heard from the studio. Quite a number of listeners comment upon this fact, which is technically unaccountable, for the acoustics at the cosy concert chamber at 1YA are all that could be desired, and as far as broadcasting itself is concerned, singers would much prefer to face the microphone there than to appear in the Town Hall before one that collects all the incidental noises among a big audience.

THE Lyric Four is recognised by all competent judges as the finest vocal quartet in the Dominion, and it is more than that. It is a whole entertainment in itself, for each member is a talented contributor to its programmes, and humour is never wanting when Mr. Alan McElwain is about. Consequently the Saturday night hour of this quartet at 1YA is always one of our best features of the week. Last Saturday was no exception, though the Lyrics had a heavy evening. An hour before the microphone, an appearance at a local theatre, and then a performance before His Excellency, who was the guest of the Savage Club, is a big bill to fill in one night.

THERE is very general commendation among those who have secured copies of the "Record's" publication, the "New Zealand Radio Listeners' Handbook." The wide range of useful information supplied, and the excellent tables of broadcasting stations with their wave lengths and hours of transmission are just what the average listener requires. The book should be assured of a ready sale among Auckland fans.

AN enterprising New York newspaper, "The Evening Telegram," has announced that its radio department is investigating the possibilities of transmission on a wave-length of only three-quarters of a metre.

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