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# *Radio Reproduction Improved by Moving Coil Loud Speaker*

TELEPHONE reception, which was once popular, is rapidly falling into disuse and it is now a comparatively rare occurrence to see members of a family grouped round the fire with headphones clamped over the ears, enraptured by some item of the broadcast programme.

The reason for this is threefold. First, the modern radio receiver has made such rapid progress, both in purity of reproduction and general sensitiveness, that it is now possible to work a loudspeaker from one or two valves. Secondly, improvements have been made at the transmitting end, and the power of our broadcasting stations has, in many cases, been increased, with the result that greater volume can be obtained with a given set. Thirdly (a most important point), the modern loudspeaker is vastly different to that wretched contraption of a few years back, of which the man on the street was rather apt to say "it sounds like a gramophone."

With the advent of loudspeaker (power) valves, and with the progress in component and set design generally, the listener began to learn that good speakers really could give quite good reproduction, and to realise what selfish things telephones were. One has visions of the head of the family sitting, pulling away at his pipe, with the only existing pair of 'phones over his ears, and contentedly listening to the broadcast programme, with the rest of the family eagerly waiting their turn which, incidentally, in some cases, never came!

## Evolution of Speakers.

SPEAKERS have evolved rapidly, so rapidly that the listener who wants the maximum from his set must constantly change with the times. Among those who have paved the way to the modern speakers, and who merit special commendation for applied research and study are Messrs. Amplion and S. G. Brown. Through their efforts reasonably good speakers came on the market and were supported by reasonably good sets, but reproduction has not been entirely faithful. To remedy this has meant years of profitless research—but the fruit has been borne and it is safe to say that with the advent of the dynamic, or moving coil loudspeaker supplied by a push-pull amplifier with signals strengthened by the screen grid valve, the acme of perfection has been reached.

## Invention of Moving Coil.

THE idea of the moving coil was an expensive one to the General Electric Company of America. The policy of this company has been to engage a large number of brilliant scientists, mostly young men, and to equip them with everything they need for first-class research work, leaving them to work out their ideas without being worried every few minutes to see whether they have produced a commercial invention.

Two young Americans, Messrs. Rice and Kellogg, engaged by this company, were responsible for the invention of this remarkable speaker.

Shortly after the invention, and certainly before it was commercialised, Mr. Harris, the

editor of the "Wireless Constructor" (England), visited the laboratories, and we will let him give his impressions of this new speaker in his own words: "I learned a great deal that afternoon about loudspeakers," he writes, "and many of my illusions were shattered. I realised for the first time how hopelessly inadequate was the reproduction of the low notes by the then existing loudspeakers, and how those which seemed to reproduce the lower tones gave them unfaithfully. I also realised how the repression or accentuation of the harmonics of a note can completely alter its character. One experiment which Mr. Kellogg showed me brought this out very clearly.

## A Conclusive Experiment.

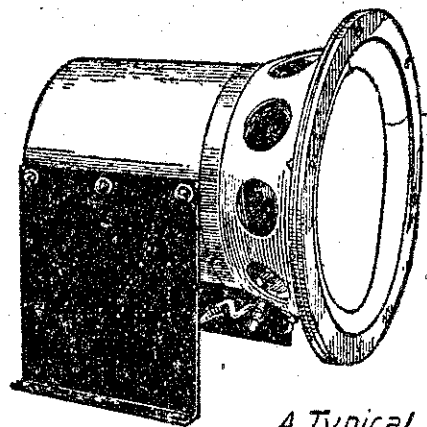
"SUSPENDED from a piece of board were a number of very large bottles the mouths of which projected through the board. Water at various depths had been poured in these bottles and a kind of xylophone rod placed over each so that when the rods were struck one obtained a musical note which resonated in the bottle, giving rather a pleasing and rich musical effect, this being largely due to the number of harmonics of the fundamental note. Mr. Kellogg then played a few simple tunes on the scale so that I could accustom my ear to the true reproduction, and then went into another room and played the same little tunes before a microphone so that the output could be fed into any of the loudspeakers in the laboratory where I was listening

—(Continued on page 2).

(Continued from Front Page.)

"I now had another shock. In fact I was becoming used to shocks on that memorable day, for the sounds which emerged from the various loudspeakers did not, in a single instance, even remotely resemble the tones I had heard directly from the instrument.

"In many cases the change from one loudspeaker to another produced an entirely different set of sounds, only recognisable as coming from the same



A Typical  
Coil-driven Speaker  
(Baffle not shown)

source by the contamination of the air. Mr. Rice now switched the output of the microphone over to the Rice-Kellogg (dynamic) speaker and immediately the reproduction was faithful to the original.

"I was then shown how important was the influence of the baffle board, for without this board reproduction was thin and poor."

The writer continues to cite incidents, how, time and again, he was amazed at the remarkable possibilities of this new speaker. It was capable

of faithfully reproducing the whole of the music scale, and harmonics, particularly when "baffled."

Since that memorable occasion the dynamic speaker has won the favourable comments of a world of admirers. From one laboratory they have spread, bringing their pleasing results to an ever-widening circle of radio listeners—and now they have reached New Zealand.

#### How a Dynamic Cone Works.

SOME few weeks back an article by "Megohm" (August 31) described the technical principles of the dynamic speaker—these we will briefly re-iterate.

The name "moving coil" denotes the principle. A tiny coil attached to the apex of a relatively small cone is surrounded by a powerful magnet energised, usually, by a small current of electricity. Thus moving parts are reduced to a minimum. A great deal of play—up to half an inch—can be provided for, so that any musical vibration can be accommodated without distortion. Any volume can be handled without the slightest detriment to quality.

This type of speaker is distinctly superior to the ordinary type. Practically every speaker which has been produced in the past has been of the magnetic type, having an iron armature actuated by an electro-magnet. The fluctuating current from the receiver causes a vibratory motion of the armature, which motion is transferred to the cone, in the cone speaker, or to the column of air in the horn speaker. The outstanding fault of this design is that when the speaker is loaded above a

certain point the armature strikes the pole pieces of the magnet and causes a rattle. Another objection is that the armature responds to certain notes more readily than to others, and consequently gives uneven or distorted reproduction.

Because of its principle, both these faults are impossible with the dynamic cone.

The speaker, requiring a strong current, is unsuited for weak sets, and under such conditions may even prove unsatisfactory. The solution is simple and has been described by "Pentode" in this issue—"Push Pull Amplification." This is undoubtedly the finest amplifier that can be used in connection with the moving coil speaker, and as, with the exception of one or two new transformers, any amplifier can be adapted, the reader who desires to obtain quality reception cannot do better than alter his amplifier and use a dynamic speaker.

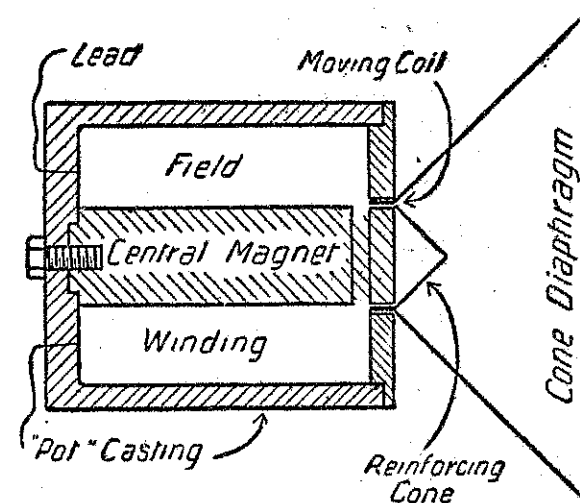
#### The Moving Coil in New Zealand.

MOVING coil speakers are not new to New Zealand, as reference to past advertisers will prove, the Magnavox Co., now the largest manufacturers of these speakers, having already introduced their products to the New Zealand market. Up till the present the price has been beyond most pockets, but now the new models will prove to be popularly priced.

A free-edged cone of this type requires a baffle to prevent the air waves, set up simultaneously by both the front and back cone interfering with one another. Great latitude is permissible in the construction of this baffle, which may range from a handsome

cabinet to a butter-box. The units now on the market (Magnavox) are constructed so as to allow of the easy application of the baffle, while it is stated that the American manufacturers (Magnavox) are turning out 1000 units a day, these are being readily absorbed by manufacturers of sets who are using practically no other type.

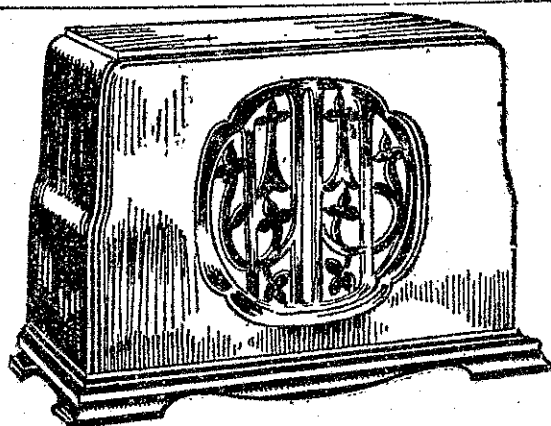
The popularity of the dynamic cone can be gauged from the fact that they



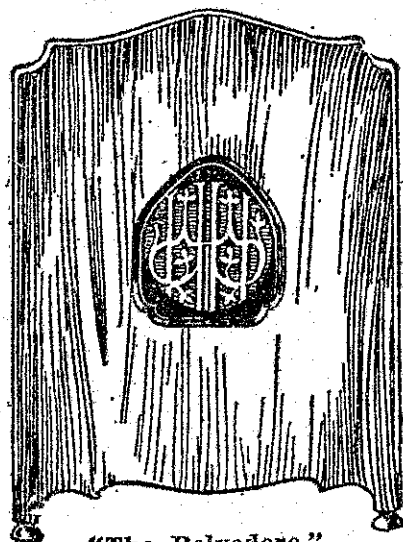
predominated at the Olympic Radio Exhibition which introduced the radio season in the Northern Hemisphere.

Their popularity has spread to gramophone manufacturers, who are using this unit in the latest type of cabinet machines.

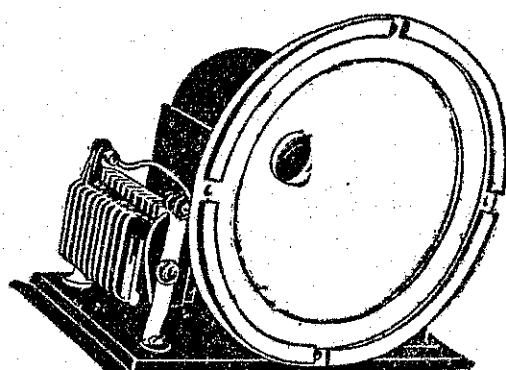
Great attention has been focused on them and great results obtained. Not the least of their attraction is the fine piece of furniture they make when enclosed in a suitable cabinet.



"The Beverley."



"The Belvedere."



"The Magnavox Unit."

Magnavox Dynamic Speakers used in conjunction with a Gramophone Pick-up give results equal to the highest-priced Electric Gramophones. The Magnavox Company control the patents for the famous "Dynamic" Speaker which word they applied to this new type of sound reproducing instrument. Magnavox Speakers are a revelation in sound reproduction, and will carry as much volume as can be imposed by a Radio Set or through amplification. There is no distortion or rattle. Magnavox Dynamic Speakers created a sensation at the American Radio Convention this year, and the largest and best manufacturers are equipping their sets with Magnavox Dynamic Speakers. There is a type for every kind of electrical current. Complete speakers or units which can be placed into the present cabinet of your gramophone or speaker can be supplied as follows:

D.6	6 Volt D.C.	Current
D.7	110/220 D.C.	Current
D.8	6/12 Volt D.C.	Current
D.80	230 Volt A.C.	Current

Also complete Unit and Amplifier for 230 Volts A.C.

## The Wonder of the Radio World

# MAGNAVOX

# DYNAMIC

# POWER SPEAKER

Maintains all the Rich, Full Tones of  
Original Broadcast at  
**TREMENDOUS VOLUME**

Not only gives greater volume, but "Separation" of tones and instrumental values on volume, such as can never be heard on magnetic and other type units.

Magnavox Dynamic gives clear articulation of the spoken voice, life-like naturalness that is startling in its fidelity to life itself.

#### ALL WITHOUT DISTORTION OR RATTLE.

Dealers' Note.—Magnavox is the world's finest moving-coil speaker, and will always be the lowest-priced genuine dynamic speaker. The moving coil patents are controlled by THE MAGNAVOX CO.

Procurable from:—Auckland:—Johns, Ltd., Harte and Gray, Farmers' Trading Co., Ltd., J. Wiseman and Sons, Frank Wiseman, Ltd., Radio, Ltd., National Electric, Superadio, Ltd.

Wellington:—Thos. Ballinger and Co., Ltd., Kirkcaldie and Stains, Ltd., Harringtons, Ltd., C. G. MacQuarrie, F. J. W. Fear and Co., J. A. Smyth.

Hamilton:—Pitcher and Co.

New Plymouth:—F. H. Jellyman, J. B. MacEwan and Co.

Napier:—David S. Laing and Co., Ltd., Gisborne:—Swan Radio Co., Wanganui:—Bennetts, Ltd., Percy Coleman.

Nelson:—Wilkins Field Hardware Co. Christchurch:—Direct Supply Co., A. R. Harris Co., Ltd., C. B. Gough and Sons, Bennetts, Ltd., J. I. Smail.

Dunedin:—Barnett's Radio Supplies, A. and W. McCarthy, Ltd., Chas. Begg and Co., Ltd., Laidlaw and Gray, Ltd.

Invercargill:—Dominion Electric Engineering Co.



## Radio Round the World

CONSIDERABLE interest in amateur radio circles throughout the world was taken in a message-handling contest originated by the American Radio Relay League and conducted for a fortnight in May, 1927. The purpose of the contest was to determine the most reliable amateur radio station in each country of the world for contact with the American organisation, the home of amateur radio. Mr. D. W. Buchanan, operating the Ashburton station 3AR, was the New Zealand winner of this contest, with Mr. O'Meara, of Gisborne, operating station 2AC, as runner-up. A further contest was held last February, and by radio Mr. Buchanan is advised that he has again won the honour of New Zealand Foreign Contact Station with 328 points, Mr. O'Meara being second with 274 points. The short-wave radio-phone transmission of the Ashburton station is generally reported loud-speaker strength in Victoria and New South Wales, and has been heard much further afield.

A CYCLIST was recently travelling along a busy thoroughfare after having purchased two radio valves, which he hung from his handlebars. The surface of the road was greasy owing to rainfall, and at a corner he unfortunately skidded and fell, the package of valves flying from his bicycle into the centre of the roadway. A horse drawing a cart was approaching the scene of the accident, and the horse inadvertently kicked the package of valves a considerable distance with one of its forefeet. Fully expecting to find his recent purchase broken and useless, the cyclist dashed after his package and returned to the radio shop to have the contents tested. To his surprise he found that the valves were not only unbroken but their filaments were intact, giving results in no way different from their original ability. We, however, would not advise him to make a practice of this sort of thing.

VERY many complimentary references to the broadcasting from St. Mary's Cathedral on Sunday week have reached the New South Wales Broadcasting Company, Limited, in connection with the opening services at the Cathedral. The general consensus of opinion is that the choral and orchestral music throughout the morning reached a point very near to perfection, and that the elaborate installation in the Cathedral very fully justified itself. Both the liturgical and massed choirs gave a very fine rendition of the various works that were chosen for the Mass, and the playing of the orchestra was a feature of the service. Telegrams to hand from inter-State sources also acclaim the beauty of the transmission. The speeches from the afternoon ceremony were also greatly enjoyed.

A REMARKABLE instance of the employment of several different methods of electrical communication occurred recently when a large dollar-bond flotation was made for Warsaw, Poland, simultaneously in Europe and America. A thousand-word circular was compiled and sent by radio to London and Stockholm. Quarter-page advertisements were then set up in London and proofs made and distributed by air-mail to various European capitals. The circular was cabled to South America and put into type there. In New York it was set up and distributed by telephone to cities as far west as the

Pacific Coast. Thus this international financial enterprise employed radio picture circuits, aeroplanes, telephoto, radio, and cable.

CONSIDERABLE optimism prevails in South Africa in regard to the future of broadcasting in that territory, and the manager of the African Broadcasting Company stated recently that he and his company were much more optimistic to-day than when they "started-in." At the time of the formation of the African Company there were about 11,000 listeners licensed throughout South Africa, whereas to-day there are more than 20,000, and it is believed that if there were no pirates the number would be nearer to 30,000. The question of unlicensed listeners is causing the A.B.C. considerable anxiety, and efforts are being made to have the Radio Act amended so that this evil may be overcome once for all. According to the present state of the law under the Act, inspectors have liberty to examine licensed sets, but what the company wants to know in this connection is the number and the location of unlicensed sets!

DURING its session in Chicago, the Radio Division of the National Electrical Manufacturers' Association adopted a number of important resolutions, particularly in view of the movement now afoot to curtail the licenses of many transmitters. Two among these show the trend of thought. The meeting resolved that "greater consideration be given to those stations which broadcast programmes satisfying a wide variety of interests or groups," and it condemned those which "now act purely as organs in selling merchandise for one firm or which exclusively broadcast programmes devoted to furthering the interests of some particular group, class or creed."

ALTHOUGH the Admiralty is seldom communicative regarding the progress of improvements in any feature of the ships of the Royal Navy, the results which have been obtained in recent months with the use of short-wave wireless apparatus on battleships have been so striking that they were specially mentioned in a recent report. With the use of short-wave transmitters no ship in the Navy, in no matter what part of the world it may be, is outside the range of services in Great Britain, and the Admiralty can communicate with every ship at least once every day. Such results would never have been possible with apparatus using ordinary wave-lengths, and its value in times of crisis is obvious.

SHAKESPEARE went on the radio in London recently when for the first time a more or less complete version of "Hamlet" was broadcast. As only an hour and a-half was available for the performance, there were necessary cuts, but a reader linked up the breaks in the play, and the main scenes were presented in their entirety. Whether the ghost of Shakespeare listened in on the spectral performance or not no one has hazarded a guess, but if he did the sounds of his famous character's words coming from empty air probably succeeded in making "each individual hair to stand on end like quills upon the fretful porcupine."

WHEN daddy goes prospecting in Northern Ontario these days, he is not necessarily severed from his family as were those who preceded him in other days. The forest radio stations of the Ontario Department of Lands and Forests last year carried, free of charge, 52,000 words back to civilisation regarding the welfare of daddies, sons, and sweethearts. This year it has been decided to charge a nominal rate for messages of importance.

A RESIDENT of Seattle (U.S.A.) has applied for a license to operate machines that kill insects in the State's fruit orchards. The apparatus is a high frequency radio invention, with aerials strung over the trees, and has been in use all summer until the radio supervisor here stopped its use because of lack of a transmitter's license. He says the machine has been highly successful in eliminating the pests from the orchards, and means the saving of millions of dollars to the country.

AN order given out by the Ministry of Communications, Italy, decrees that musicians and singers will be obliged to broadcast when requested. The chief stations of Rome, Milan, and Naples are under orders to provide

perfect rendering of performances, otherwise the performers will have the right to withdraw.

FORTUNATELY located, Shanghai radio listeners are receiving broadcast programmes of an international character, according to word from those parts. While relay broadcasting has not been undertaken in Asia or Japan, broadcasts from neighbouring countries are being picked up constantly by average sets. Shanghai is within reach of direct broadcasts from Manila and Tokio, and other stations in various parts of Japan are heard frequently. Mukden, Manchuria, is a popular and frequent entertainer. Occasionally come programmes from Australia, Hawaii, and Russia.

QUESTIONNAIRES sent out by Finland's broadcasting station showed that lectures of educational and cultural value and news topics were next in favour. Listeners have expressed universal approval of the playing of the kantele, which takes first place on the music list. The kantele is an old national musical instrument with a beautiful tone. It is shaped somewhat like a horizontal harp. After the kantele the listeners placed songs, orchestra music, theatrical performances, operas and the teaching of languages. Church services are preferred to jazz.



*It charges either at 1.3 or 6.5 amps  
and it's made by PHILIPS!*

"Once upon a time (as fairy books say) I lugged a messy accumulator to the office. After ruining a couple of suits and nearly breaking my poor old back—I met the Philips 'Four-Fifty'."

"And now, Sir—just a snap of a little old switch once or twice a week on my way to bed and the little 'Four-Fifty' gets on with the job—silently, efficiently—while I sleep, and never have to move even a wire or a terminal on that 'A' Battery. Take my tip and hand 85/- to your dealer, and say, 'A 'Four-Fifty,' please."

**PHILIPS**  
**BATTERY CHARGERS**

8R17N

Advt. of Philips Lamps (N.Z.) Ltd. (Radio Dept.), Roper Gibbons Building, Courtenay Place, Wellington

## The Latest in Radio

### The New Season Foreshadowed at the London Radio Exhibition

THE beginning of the winter for those in the northern latitudes denotes the introduction of the radio season, and to mark this auspicious occasion a radio exhibition, embodying all the latest developments in radio, was opened in Olympia, London, on September 22.

A year has expired since the last exhibition of its kind—it has been a year of progress, and this year's display is adequate recognition of the evolution of radio.

As a whole, the exhibition provides a pleasing spectacle. A characteristic blue and gold colour scheme, combined with the individual efforts of the stalls, combines to provide a unique sight.

#### General Tendency.

THE general tendency is towards quality—price and distance-getting being secondary considerations, though by no means relegated to the background—there being sets for every pocket and inclination. Workmanship and design have been combined to provide series of artistic models.

Amongst the complete sets, the tendency seems to be towards simple "all electric" combinations with a minimum of controls.

In many models, provision has been made for a gramophone pickup, while some embody a complete gramophone. One of these, intended for theatres and dance halls, for it is priced at 200 guineas, is exceptionally fine. A five-valve receiver electrically operated, which needs neither aerial nor earth is combined with two electrically-driven gramophone turntables. Reproduction is made flawless because of the embodiment of a moving coil loud-speaker. Volume can be regulated from that of a full orchestra down to that of an ordinary gramophone.

From this super set the scale is descended, provision being made for the pocket of every man.

Provision has been made for those to whom electric light is not available. Batteries and chargers have been made cheaper and better. Devices by which accumulators can be charged from the

lighting sets of cars, are in evidence and are proving of great interest.

#### Short-Wave Developments.

THE man to whom long-distance is a charm finds interest in the new short-wave receivers, designed to bring in stations situated in all parts of the globe. 3LO, Melbourne, seems to be the goal of the DX man for a set bringing in this station well is considered to represent the acme of perfection.

Both in short and medium and long wave receivers the shield-grid and pentode (5 electrode) valve are being used. The new season's models are, of course, completely shielded.

#### Dynamic Speakers.

PROMINENT among the speakers is the moving coil, but good cones and horns modelled on the exponential lines are also in evidence. The dynamic speaker lends itself to artistic design, and many wonderful pieces of furniture housing these speakers are on view at Olympia. Unassembled parts are available for a modest £5 while a very attractive assembled model, with a fretted mahogany baffle is available for 10 guineas. The moving coil is coming very much to the fore, and should establish a record for this its initial year of popularity.

#### Eliminators.

FOR the last few months the English market has been flooded with types of battery eliminators and these are in corresponding numbers at the exhibition. B battery eliminators, A battery eliminators and grid-bias eliminators, the whole combined and trickle chargers form a very imposing display on the stands of many of the firms. These respond to the general cry to-day for quality combined with simplicity.

The use of B eliminators does away with the bugbear of dry batteries, accumulators or wet cells with the attendant troubles and gives the owner every opportunity to get the best from his set.

With the advent of plate current at almost negligible cost, it may be hoped

## A Progressive Enterprise

### Meritorious Work by Manawatu Radio Club

A BROADCASTING station which is doing excellent work to serve its district is 2ZF, Palmerston North.

#### The Plant.

SITUATED in the heart of one of New Zealand's most progressive towns, with its masts towering forty feet above the roof of one of the large business establishments of that town, and 100 feet from the pavement, 2ZF is an imposing sight. With an energetic and able president, Mr. W. A. Waters, the Manawatu Radio Club, with a membership of 230, has showed remarkable progress, and now their transmissions are a credit to them, and bring happiness into many local homes that would otherwise be radioless. Within the last twelve months the studio has been refurbished and draped, and the station reorganised. Since then the membership has increased from 50 to its present number. New members are enrolling daily.

The transmitter consists of a 5-watt speech amplifier, two 50-watt modulators, and one 50-watt oscillator. The

power is supplied from a motor generator supply, 1000 volts, through a suitable switchboard, with automatic cut-outs to protect the valves, etc. The transmitter is built on a wooden frame, and enclosed in plate-glass. The wavelength is 285 meters.

#### Programme Organisation.

A DEFINITE programme organisation serves listeners with a regular entertainment. A children's service, followed by a musical recital, is the usual order, though exceptions are made when important events are available for broadcasting.

RELAYS have now been attempted with considerable success. The first was to put 2ME on the air when a two-way communication was in progress with 2XAF.

These short wave stations were picked up by the president, and relayed to the studio, but as Mr. Waters has only one short wave set only one side of the conversation would be relayed at one time. The relay was excellently handled, and reflects great credit on those responsible.

DANISH fishing fleets are being fortified against weather eventualities by radio reports broadcast six times daily.

MEMBERS of the Australian Scottish Delegation were able to listen in to their home country (per 3LO Melbourne), whilst flying north on a London to Edinburgh express.

that quality will improve. The new exhibited models give no excuse for blasting or distortion.

It is gratifying to notice that the veil of secrecy has been lifted and manufacturers are disclosing to amateurs information previously closely guarded. A fuller knowledge coupled with a better receiver should make the 1928-29 radio season a record one.

WITH great interest and expectance one can go to the Olympic exhibition. Two evenings, or one long visit at least are necessary in order to cover the whole ground adequately and to get a really good idea of what is doing in the world of radio.

#### In Retrospect

- 1831—Faraday succeeded in obtaining electric currents by moving a wire across a magnetic field.
- 1864—Clerk-Maxwell investigated the fundamental nature of magnetism and electricity and predicted the possibility of producing electro-magnetic waves in the ether.
- 1888—Hertz succeeded in producing such waves.
- 1889—Lodge invented the coherer and discovered the principles of electric tuning.
- 1897—Marconi invented the elevated transmitting and receiving aerial.
- 1901—First wireless signals sent across the Atlantic.
- 1904—Fleming invented the two-electrode valve.
- 1906—Dunwoody discovers the rectifying action of carborundum crystal.
- 1907—De Forest adds the grid to Fleming valves.
- 1915—First trans-Atlantic speech by wireless.
- 1920—Broadcasting.

### Right Royally Entertained

is he who—buying with good judgment—desires the utmost in reproduction, long range, appearance and economy and finds these in—

#### KING NEUTRODYNE

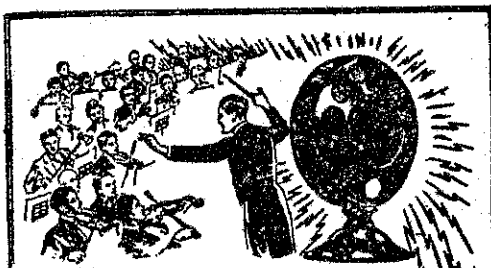
Not only in name a king, but, in actual fact, a ruler of space.

Australia's talent commanded in your armchair.

Several Models for your Choice.

F. J. W. FEAR & Co.

63 Willis Street • Wellington.



A single control 6-valve KING set, an epic of simplicity, selectivity, and range.

£27 10s. 0d.

With valves. Money Can Buy No Better.



**Sonora**  
CLEAR AS A BELL  
RADIOS-PHONOGRAPHS

Call and hear the latest model SONORA. Unequalled for quality of tone. Buy a SONORA and you will really enjoy Radio!

Arrange for a demonstration TO-DAY

F. J. PINNY Ltd. 58 Willis Street, WELLINGTON.



# Does a Condenser Condense?



THE condenser is known to most radio beginners, or to those unacquainted with their sets as "the thing behind the dials." It is known that by altering the relation of one set of plates (vanes) to another, stations operating on different wavelengths can be brought in. Certainly that is a condenser but its function cannot be limited there. It is one of the most important pieces of apparatus, or should it be said essentials, where electricity is at all made use of.

## A Condensing Condenser.

IT is not altogether clear just how the condenser earned its name, for so far as designating its function the name is very misleading. Probably it obtained the name from the fact that its electrical-storing capacity formed the first-known of its several valuable properties, for primarily the condenser is a storer.

The condenser was invented about the middle of the 18th century when electricity was supposed to be an invisible and intangible fluid. Thus it may be supposed that the condenser received its name because, recognising its storing capacity the inventor considered that to store electricity it must first be condensed.

The earliest forms of condensers consisted of a vessel containing water into which dipped a brass chain. An electric charge was imparted to this crude condenser by placing the end of the chain in contact with a frictional electric machine. These, it will be remembered, were the days when static electricity only was known, and when electricity in any other form, e.g., that of a continuous or alternating current, was not conceived.

## Leyden Jar.

THEN came the well-known Leyden jar consisting of a glass cylinder coated inside and out with tinfoil, a metallic chain, again making contact with the interior of the device. This was capable of storing up a considerable electric charge, as probably every schoolboy has found out to his discomfort, for the charge can be raised to high voltage, but of little amperage. The charge is analagous to that held in the patches of ionised air referred to in a previous article.

## FOR SALE.

2 PHILIPS Z.4 VALVES, 250 watt output, 100 hrs. use. £11 each.

3 TOBE 30 WATT VALVES. New, never been used, £2 each.

7 250 AMP. GLASS CELL ACCUMULATORS (14 volt) as they stand, £14.

1 ESCO GENERATOR, with Exciter Type B.F.R.24 2,500 volt, 6 amp. output. Speed 1750 R.P.M. on stand with field exciter, motor generator, voltage control, rheo. and with 230 volt. D.C. motor, or will sell separately. Used about 250 hours; condition as new. Wholesale landed cost was £98. What offers?

Will sell power control panel, modulator panel, etc., if you want it. Write for particulars. Ideal for medium power broadcasting station.

Apply MORTON COUTTS, 2AQ.  
TAIHAPE.

## A Non-technical Chat on Question often asked

### Does an Accumulator Store?

IT may be contended that an accumulator, such as used for the A battery, is a storer of electricity. Strictly speaking this is not the case. An accumulator does not store electricity as such. What it really does is to convert electrical current into a form of reserve chemical energy which is reconverted into electrical energy when the accumulator is discharging.

This is really an adaptation from Nature. All life receives energy from the sun and food, changes its form into fat, sugar, starch, or oil, as the case may be, to reconvert it at a future time

electrons will rush away from the overcrowded plates, through the circuit (supposing the two plates to be connected by a suitable circuit, e.g., an oscillatory circuit such as in the ordinary receiving set) on to the lower plates. These plates rapidly become overcharged and the electrons rush back to the upper plates. This sequence of events will occur, provided outside circuit is suitable, with a rapidity of many thousands of times per second till the energy is frittered away by the resistance losses in the circuit.

This surging backward and forward

## 3YA has Special Service for Carnival Week

CARNIVAL WEEK at Christchurch commences on Saturday, November 3rd, with the first day's racing of the Canterbury Jockey Club.

This is one of the occasions when Christchurch is in holiday mood. The city, in its setting of spring foliage, is looking its prettiest, and is, as a rule, crowded with visitors.

Broadcasting will again play a prominent part in the city's entertainments. 3YA is arranging to cover all the attractions as completely as possible, and special studio entertainments will be given every evening. As was the case last year, 3YA will not observe any silent day, but will on Tuesday put on one of the most attractive programmes of the week.

Owing to the racing ban on broadcasting, these field events will not be handled in the same manner as was done last year, nor will a lady announcer be able to broadcast from the course a description of the dresses on the lawn, as was done during the last spring carnival. But all the sporting events at Riccarton and Addington will, nevertheless, be effectively described.

when this supply is not available. This explains hunger, as well as the reasons for regular feeding and regular charging of batteries.

### A Modern Condenser.

IT has been shown that the accumulator is not a true storer of electricity. The condenser, on the other hand, stores electricity as such.

The simplest condenser comprises two metallic plates held close together, but not touching. They are separated by an insulator—air. Air is not the best insulator and so in practice mica, paraffin wax, paper, and a host of other nonconductors are used in the making of the fixed condenser, or storer with a fixed capacity.

### Function of a Condenser.

IT is now known that an electrical charge simply consists of an accumulation of electrons—those almost infinitesimally minute particles of matter which enter into the constitution of the atom. When these electrons are set in motion along a conductor we get the phenomenon associated with an electric current.

In considering the stationary accumulation of these electrons let it be supposed that the condenser is charged so that there is an accumulation of electrons on, say, the upper plate or plates. Under these conditions the

quencies of the oscillatory current to which the condenser gives rise. By altering the relation of the moving to the fixed vanes, the circuit can be made to oscillate in harmony with that of the station desired. Frequencies are merely an expression of wavelength.

## Radio for Airplanes

RADIO apparatus for airplanes is rapidly becoming highly specialised, and is developing at a rapid rate.

At the present time three distinct pieces of apparatus are evolving—the receiver, the transmitter for both short and longwave, and visual indicator.

Of the receivers both short and longwave instruments are being rapidly perfected. Among the most potent factors to be strived against is noise, from the engines, and that due to the passage of the 'plane through the air, as well as the electrical interference due to the magnetos. To meet these mechanical disturbances special helmets are being provided, which are soundproof, and which embody earphones.

Of the transmitters several types are appearing, many under the familiar name of Marconi. These are designed to meet the special requirements of each type of machine, long-range telegraph-telephone instruments for the heavier class of 'plane, and light telegraph instruments for the lighter class of 'plane.

The weight of these transmitters vary from about 82lb. to 189lb., the range being from 15 miles to very many hundreds of miles, as evidenced in the trans-Tasman and other great flights.

Direction finders are becoming increasingly popular with airmen.

AN air pageant staged some six months ago in England provided an excellent opportunity for demonstrating the advances made by aviation and radio. The wireless or electrical side of the pageant may roughly be divided into four classes—the land-line system, for communication between all points of the airdrome, the interplane and ground control system, the Marconiphone public address system, and the B.B.C. arrangement for providing a running commentary to listeners. Over fifty miles of land-line were used in conjunction with forty-one loudspeakers, which latter required over one horse-power of energy for their operation, or roughly, ten thousand times that delivered to the average home instrument.

## JUST ARRIVED

## Magnavox Dynamic Speakers

6 Volts Direct Current, operates from the A Battery,  
£13/10/-. Unit only, £8/15/-.

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ASK FOR A DEMONSTRATION.

# The New Zealand Radio Record

P.O. BOX, 1032, WELLINGTON.

Published Weekly. Subscription Post Free in advance, 10s. per annum; booked 12s. 6d.

WELLINGTON, FRIDAY, NOVEMBER 2, 1928.

## MR. HOLLAND AND HIS "STINK-BOMB."

*HONI soit qui mal y pense.* Judging by his public statements (if this ancient but succinct saying is correct), Mr. Holland must enjoy a particularly evil mind. In speaking in the Wellington Town Hall on Thursday evening last, he launched what had previously been heralded by his lieutenant, Mr. McKeen, as a "bombshell" but which in effectiveness and noisesomeness proved to be but a "stink bomb," as it was aptly described by the Prime Minister. Mr. Holland professed to trace a connection between the collapse of dairy control and certain views expressed thereon by Mr. Goodfellow, and the granting of a loan of £15,000 to the Radio Broadcasting Company by the Government. His hearers were invited to believe that the loan of £15,000 was a *quid pro quo*, that, in effect, it was a bribe or reward. Unfortunately for Mr. Holland, his facts and dates are sadly astray. The dairy control incident, to which he referred, occurred in the end of May, 1927. The loan of £15,000 to the Broadcasting Company was authorised by the Government on October 9, 1926, seven months previously. It is scarcely necessary to point out, even to the most obtuse intellect, that the suggestion that the one was a payment for the other on these facts is futile—even wickedly futile. The suggestion does Mr. Holland no credit—but is an illuminating revelation of his nature and methods.

THE £15,000 loan by the Government to the Radio Broadcasting Company has been fully explained time and time again. There are no strings attached to it. It is a plain, common-sense business proposition. The Broadcasting Company entered into an arrangement originally for the installation of four 500-Watt stations throughout New Zealand. Subsequently, on account of the strategic position occupied by Wellington and other reasons of national defence and administration, it was desired to make 2YA more powerful than its fellows. To assist in this objective the Government agreed to advance £15,000 on first mortgage at full interest and with full protective clauses. That the Government is amply protected, not only under the mortgage which it holds over 2YA, but by the ordinary administration of the license money of listeners, is clear. Listeners pay their fees in advance, but the money is not immediately paid over to the Broadcasting Company. It is paid out in twelve monthly instalments. The effect of this arrangement is that the Government has regularly a large sum in hand, which it employs in an interest-bearing capacity; thus not only doubly covering itself in respect of its risk, but also earning a nice little sum by way of interest.

IN the 1927 session of Parliament Mr. Holland devoted some effort in the House to attacking the "Radio Record." In doing so he made certain statements which we were obliged to correct. We invited Mr. Holland to play the part of a gentleman and acknowledge his error. He failed to do so.

IN his speech, Mr. Holland also made the charge that, while Government political speeches were broadcast, the propaganda of the Labour Party was not broadcast. This statement is inaccurate. The broadcasting of all political matter is prohibited by the regulations under which the Broadcasting Company operates. Will Mr. Holland be specific and say when and where any political propagandic speech was broadcast by any of the YA stations? We imagine Mr. Holland will find it impossible to do so.

WHAT is Mr. Holland's grouch against the £15,000 loan? Does he not approve of the Government assisting broadcast listeners to secure better service and better entertainment than otherwise would have been the case? Would he have preferred listeners to have been denied the excellent service that has been given by 2YA since its inception? Will Mr. Holland be frank and say whether he wishes to further the interests of listeners and improve their service, or whether he wishes to adopt a dog-in-the-manger policy and prohibit any Government sympathetic encouragement of this modern social amenity? Is Mr. Holland for the listener or against the listener?

## Judging Programmes

### Date of Big Competition Fixed and All Stations to Participate.

THE big competition, for which the prize will be a £50 Columbia Gramophone, has been fixed to take place as follows:—

1YA .....	Wednesday, November 21.
2YA .....	Tuesday, November 20.
3YA .....	Thursday, November 22.
4YA .....	Wednesday, November 21.

The programme will be a very varied one, consisting of gramophone records electrically reproduced.

One of the purposes underlying the competition is to ascertain what the public most fancies in the way of radio items.

Listeners will be invited to allot marks (a minimum of 50 and a maximum of 99) and, basing their opinion on the appeal made by the various items, to place them in their order of popularity. From the marks awarded, the general average of public opinion regarding the respective items will be calculated and the listener whose opinion most closely corresponds with that general average will win the £50 Columbia gramophone.

The necessary coupon will appear in the "Radio Record."

In order to give all listeners an opportunity of hearing the complete programme, all the items will be repeated, that is, the whole competition programme will be given twice in the evening. Listeners will thus have the opportunity of checking over and revising the marks which they have allotted.

## B.B.C. and N.Z.

### Fine Tribute Paid by "World-Radio."

IT is very pleasing to notice that "World Radio" the official foreign and technical journal of the British Broadcasting Corporation—has recognised New Zealand in a unique manner—they have produced a special New Zealand Dominion Day number. The sections devoted to New Zealand are indeed well thought out, and are profusely illustrated with typical pictures.

In the front page section, on which is reproduced photos of 2YA studio and a sheep farm, an article reviewing New Zealand broadcasting is to be found. This section is very concise, and its several divisions deal with various aspects of broadcasting, sample programmes, including relay of race meetings (alas! what would they think now!) are given. This section concludes: "New Zealand is a lovely country, and many of her people live 'miles from nowhere.' For this reason wireless is a greater blessing in that country, especially to backblock settlers, than it is to many other countries of the globe.

On turning the page a bright collection of typical well reproduced pictures greet the eye. From Parlia-

ment House to an ice cave in Tasman Glacier the subjects range.

AN accompanying article outlines the development of New Zealand radio. This article quotes the "Radio Record" in reference to the influence of radio as outlined by Mr. Harris, the general manager, some time back.

Turning from New Zealand radio, diversion is obtained by a short, bright article entitled "A Queer Bird," and an accompanying photo immediately tells the casual reader it is the kiwi.

The New Zealand section is concluded by a very fine description of the "Island Dominion"—its birth and growth. The survey is introduced by a quotation from H.R.H. the Prince of Wales: "Two things have particularly impressed me here. New Zealand is not merely a land of opportunity for some, but of equal opportunity for all. I have never seen well-being and happiness more uniformly evident throughout the population of country and town."

This article deals with almost every aspect—history, legislation, scenery, industries, and sport. Each concise section brings before the reader a true impression of our land.

DOUBT has been swept away—radio has put New Zealand on the map. No longer is she an island of enchantment, as distant from reality as the Pandora of old. Radio draws nations and peoples together, broadens their minds and outlooks and "tells the world" how the world lives.



# Mr. Holland Fizzles on a "Stink-Bomb"

## Prompt Exposure by Prime Minister

**U**N speaking in the Wellington Town Hall on Thursday evening last, Mr. H. E. Holland, Leader of the Labour Party, launched what had been announced by a lieutenant as a "bomb-shell." It turned out to be merely a "stink-bomb," and, at that, it only fizzled and proved a dud incapable of making even a decent smell, for the suggestion was so extreme as to be ridiculous. The Prime Minister promptly gave the facts, completely disproving the connection sought to be established by Mr. Holland. What Mr. Holland suggested was that the radio loan of £15,000 was granted to the Radio Broadcasting Company as a reward to Mr. Goodfellow for the expression of his views concerning the Labour Party and dairy control. Not only was the suggestion ridiculous in itself, but it is disproved in point of time, inasmuch as the loan was authorised seven months before Mr. Goodfellow took the action for which he is supposed to have been rewarded. What a mind Mr. Holland must have!

**ACCORDING** to a special message published in "The Dominion," the Prime Minister, in speaking at Helensville on Friday, made a vigorous rebuttal to the allegation contained in the speech of the Leader of the Labour Party (Mr. H. E. Holland) at Wellington on Thursday that there was some connection between the abandonment of absolute dairy control and statements made thereupon by Mr. W. Goodfellow, and the loan made by the Post Office to the Radio Broadcasting Company.

"This is what Mr. Holland calls a charge against the Government," the Prime Minister said. "It was preceded by a hint from Mr. R. McKeen, the Labour candidate for Wellington South, that a bombshell relating to dairy control was to be dropped and that he hoped the explosion would be enough to smash the present Government."

### A Pious Hope—and a "Stink Bomb."

"Note the pious hope," the Prime Minister remarked as an aside. "Any old digger will remember what a stink bomb was like, and this so-called bombshell is one of them."

Mr. Coates read the Press Association report in to-day's "Herald." Quoting the whole of the paragraphs devoted to that particular portion of Mr. Holland's speech, he said that as soon as he read the statement he telegraphed Mr. Goodfellow advising him that he would deal with the subject at the earliest possible occasion—his meeting in Helensville to-night—and asking if he cared to make any observations. A message of a similar nature was also sent to the Secretary of the Post Office (Mr. G. McNamara), who was also asked to supply the dates on which the Broadcasting Company applied for the loan, and that on which it was granted.

### Grossly Insulting Propaganda.

Mr. Goodfellow had replied as follows:—

"The original contract provided for four 500 watts broadcasting stations. Subsequently, for State and military reasons, the Postmaster-General requested the Broadcasting Company to erect one super-station at Wellington, which was agreed to provided the Government arranged a loan to cover this additional capital expenditure. Mr. Holland's reference that this financial assistance was in any way associated with dairy control, is without the slightest foundation, and nothing else but grossly insulting political propaganda. My statement in the "Dairy Exporter" of May 28, 1927, blaming the Labour Party for the board's failure to establish the council system of election, is strictly correct. The Reform Party were in no way responsible for the failure of absolute control."

### Proved by the Dates.

Mr. Coates said that Mr. McNamara's reply was as follows, and he asked the audience to take particular notice of dates:—

"The 'Dominion' report states that the Leader of the Opposition referred to an article signed by Mr. Goodfellow, in May, 1927, for the 'Exporter.' The first application for a loan from the Broadcasting Company is dated October 5, 1926. An agreement was completed on December 16, 1926, but the

money was not paid over till July 20, 1927, the company not having ordered the material from England until the loan was assured. It is not generally known that the Department collects during April in each year the total amount due for licenses for 12 months and pays to the Broadcasting Company only one-twelfth of its share per month. At the time the application was made the Department held in trust for the company £5943; at the time the loan was actually made the amount held was £21,234, and at the present time the Department is holding £24,244, so that apart from the mortgage on the station, the Department is actually holding that amount of money payable by monthly instalments to the company."

### "Hot Air."

"There are the whole of the facts in connection with Mr. Holland's charges that there has been an agreement between the Government, Mr. Goodfellow, the Broadcasting Company, and the Dairy Board," the Prime Minister added. "That wonderful bombshell has fizzled. (Applause.) There has been no connivance. (Applause.) This talk that the Government was responsible for smashing dairy control is hot air."

The Prime Minister said that the Government had submitted two names to the Dairy Board, and they had selected Mr. S. Paterson as the Government representative in the London agency. Mr. Coates said that he had found there were serious difficulties amongst members of the board in England and Tooley Street was alarmed. All he had done was to send a cable to the board in New Zealand setting out the position as he saw it. As head of the Government it was nothing less than his duty to have done so.

### Mr. Holland and the £15,000.

**SINCE** Mr. Holland has again raised the question of the Government, through the Post and Telegraph Department, authorising a loan of £15,000 to the Broadcasting Company for the provision of a super-power station at 2YA, it may be as well to recapitulate the facts concerning that transaction. It is difficult to see why Mr. Holland should take such exception to an action which has been of such service to

broadcasting, but it may be that he is compelled to seize any imaginary grievance to disguise his lack of real "ammunition."

The facts concerning the £15,000 loan are that the Radio Broadcasting Company, by its original agreement, undertook to provide 500-watt stations at the four centres. After progress had been made with 3YA and 1YA, and when the company was contemplating action with 2YA, Mr. A. Markman, then secretary of the P. and T. Department, on September 15, 1926, approached the Broadcasting Company with a view to having a larger station erected in Wellington than that called for in the company's contract. Again, on September 23, 1926, he further stressed the urgency of the matter.

**UNDER** date September 21 and October 5, 1926, the company replied to the overtures of the Department, and offered to install a 5 k.w. station at Wellington, subject to the Department loaning it the difference between the cost of the size of the station originally contracted for (excluding land and buildings, which ultimately cost the company a further £8000), and the size of the station proposed, namely £15,000, on a first mortgage debenture. This offer was accepted by the Department on October 19, 1926, and legal agreements subsequently entered into.

The views expressed by Mr. Goodfellow were published on May 28, 1927—nearly seven months later. The "connivance" suggested by Mr. Holland, therefore, proves to be ridiculous on the face of it, and a tribute only to Mr. Holland's own offensive imagination.

The details supplied by the present secretary to the Post Office, in his telegram to the Prime Minister, published in this article, shows quite abundantly how fully the Government is protected not only by the first mortgage debenture, held as security, but by the method of paying over listeners' money in instalments. This method ensures that the Government is fully protected, and, as a matter of fact, is able to make its cash balances interest earning.

## Checking Interference

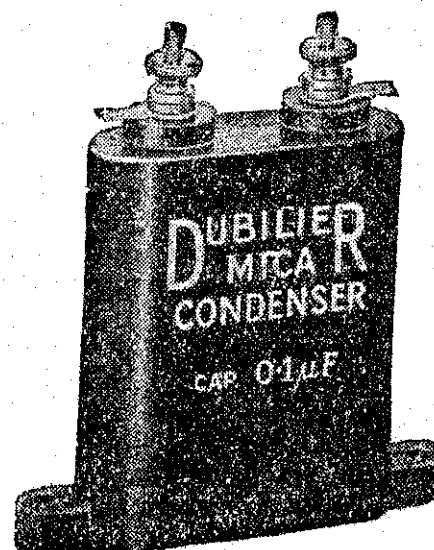
**WE** are happy to be able to record a sympathetic action on the part of the Railway Department in the matter of checking interference to radio listeners caused by a 10-volt crossing bell. We recently received advice from a Te Kuiti listener to the effect that considerable interference was being caused by a certain crossing bell in that town, and asking whether something could be done to adjust matters. We passed on to the General Manager of the Railway Department, Mr. H. H. Sterling, this complaint, and are happy to advise that we have now been informed that the department has made arrangements to instal condensers across the bell contacts, which measure

should obviate the disabilities complained of.

It may be of interest to radio listeners to know that Mr. Sterling is himself interested in radio, and when in Hamilton, held a wireless receiving and transmitting license, his station number being 1AI.

### Taranaki Proposal

**THE** establishment of a broadcasting company in New Plymouth is being considered by the North Taranaki Radio Society, and Messrs. E. J. L. Payne, J. Pigott, and F. H. Huggard have been asked to report on the proposal. A 250-watt station has been suggested, and it is believed there would be no difficulty in obtaining the necessary talent both on the technical and entertainment sides.



## DUBILIER HIGH VOLTAGE CONDENSERS

Type L.A.A. 350 Volts D.C.	1 to 8 M.F.D.
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ACCURATE AND RELIABLE.

**A. E. Strange** 404 Worcester St. CHRISTCHURCH

## Armistice Day

### Re-broadcasts of London Service

ARMISTICE DAY falls on a Sunday this year, and the programme of the British commemorative services has been altered and the conditions for overseas reception may not be as favourable as those which obtained in 1927. However, all the New Zealand stations will attempt to re-broadcast the London service. It will be remembered that last year 3YA's re-broadcast of 5SW, which was relaying the service from Canterbury Cathedral, was very successful.

### Schubert Centenary

### Broadcasts from All Stations

ALL the New Zealand stations will commemorate the centenary of the death of that great song writer Franz Schubert, this month. On different evenings the programmes from the various stations will be devoted entirely to the works of the great composer, and lecturers will discourse on his life.

The dates for the concerts are:

- 1YA Tuesday, November 13.
- 2YA Monday, November 19.
- 3YA, Wednesday, November 21.
- 4YA, Friday, November 16.

## A "Courier" 4 Logs Successfully 115 Stations

Mr. C. R. Elliott of Le Bons Bay, Banks Peninsula writes in praising the great results achieved by his "Courier" Four and also sent in an enormous long "log" of the stations he has heard. Unfortunately space does not warrant the publication of Mr. Elliott's log but a glimpse of the original shows immediately that he has heard all the big broadcasting and amateur stations in Australasia besides some two score American and Japanese stations. Even 7 B.Y. and 7 C.A. India have been recorded by Mr. Elliott.

### Proof of what you can achieve on a "Courier"

The only set sold in New Zealand that can be changed over from broadcast wavelength reception to low-wave reception by the mere flick of a switch. The set that "employs no troublesome plug-in coils."

The "Courier" 4-Valve      The Marvellous "Courier" 3  
Price      Price Complete  
**£27-10-0      £19-5-0**

If you can't get the "Courier" from your dealer—write to us direct and we will see that you are supplied.

The "Courier"  
**"Brings tidings from afar"**  
WHOLESALE ONLY:

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ALBERT STREET, AUCKLAND

### Sporting

November 3rd-10th.—Racing and Trotting Carnival results—3YA.  
November 7th.—Leckie v. Radford boxing match—3YA.

### Heeney-Tunney Broadcast

### Technical Appreciation

THE success of the Heeney-Tunney fight from a radio point of view will still linger in the memory of listeners. As a technical feat the radio service then given took high rank, and copies of the "Radio Record" outlining the treat given New Zealand listeners were posted by Mr. A. Gibbs, Chief Telegraph Engineer, to a number of technical friends in America. The article in the "Record" outlined the accomplishments of the Post and Telegraph operators in picking up Morse messages on shortwave and making them speedily available to the broadcasting staff. Description was also given of the success achieved in picking up and re-broadcasting the special midnight summary of the fight arranged for by the Broadcasting Company.

The feat represented by picking up such a tremendously long-distance reception and rebroadcasting it attracted the interest of the American engineers. In acknowledging receipt of the "Radio Record," Mr. Otto B. Blackwell, transmission development engineer of the American Telephone and Telegraph Company, says:—

"I have been much interested in reading the article of the 'Radio Record' regarding the picking up and broadcasting of the description of the Heeney-Tunney championship fight. There must have been a good deal of thrill in broadcasting so tremendously long-distance reception, even though we are all becoming used to wonders in the communication art."

Mr. William H. Copen, of the International Standard Electric Corporation, New York, writes:—"So far as I know, this is the longest rebroadcast which has been successfully done, and I feel that you are all to be congratulated on the results you obtained."

Mr. Lloyd Espenschied, also of the American Telephone and Telegraph Company, comments:—"It seems somewhat incongruous that the staging of a fight should be the occasion for connecting together our countries telephonically! Let us hope this is just the forerunner of a more intimate and sustained connection, and one which will

be of economic and social use, as well as of sporting interest."

Mr. Ralph Bown, of the American Telephone and Telegraph Company's New York office, says:—"I was particularly interested in looking over the 'Radio Record' and learning something of the personnel and organisation of broadcasting in New Zealand. I have seen copies of the publication put out by the British Broadcasting Company of a somewhat similar nature to the 'Record,' but have never seen anything of the kind in this country. It seems to me a very useful publication."

### Intelligent Listening

A PLEA for intelligent listening is made by Australian stations. It is pointed out that the ordinary programme of an A class broadcasting station has to be organised to suit the varied tastes of thousands of listeners daily, and it is claimed that it is not practicable to satisfy more than 60 per cent. of this number in regard to any particular item.

To get over the difficulty, it is urged that listeners should intelligently study the daily programmes of the broadcasting stations in the newspapers, and select the items they want to listen to, and tune in to them at the scheduled time. It is claimed that if listeners only tune in what they like and tune off when the station is broadcasting their pet aversion, whether that be church services, horse racing, jazz, or chamber music, there will be less criticism of the programmes of the A stations in the future.

It is asserted that much of the criticism of broadcasting is due to indiscriminate listening, and also to a surfeit of listening. It is suggested that listeners should accept and act upon the slogan, "Listen less and listen well." There is, it is generally admitted, much to be said in support of the plea for more intelligent listening and a careful study of the broadcasting programmes in advance.—(Dunedin "Star.")

### "Southern Cross" Echoes

### Letters from Australia and U.S.A.

THE Australian mail has brought a large number of letters reporting reception of the New Zealand broadcast in connection with the Southern Cross flight. These letters have come principally from New South Wales. Great praise is given for the transmission. One writer in Victoria reports that he followed the flights both to and from New Zealand, being very keenly interested because he gained his wings in France in 1915. His letter is enthusiastic. Incidentally he remarks that when 2YA was rebroadcasting 2BL he preferred to listen in to 2YA for the transmission was so clear and satisfactory.

Another letter comes from Waratah, near Newcastle, the home town of Litchfield, the navigator. This was the first soil over which the Southern Cross flew, and the correspondent com-

ments on this fact to prove how strong the homing instinct is.

From Portland, Oregon, U.S.A., comes another letter reporting reception of 2YA when broadcasting the flight of the Southern Cross from the Richmond aerodrome to New Zealand. The writer, Bishop Sumner, also appends a copy of a Wellington cablegram which appeared in the "Morning Oregonian" announcing the arrival of "Captain Kingsford Smith and his three companions."

GREECE purchased only 233 radio sets during all of last year.

## Exide BATTERIES

MEAN DEPENDABILITY.  
Installed at 2YA Wellington.

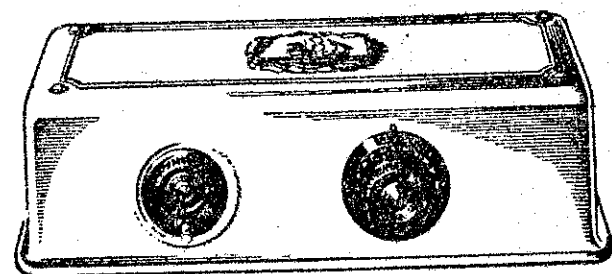
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EXIDE SERVICE STATION

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## ATWATER KENT RADIO

MODEL 35.



MANY millions of people now know the ease, the clarity, the mellow tone of ATWATER KENT reception.

These ATWATER KENT characteristics are the standards by which all radio is judged. Hear ATWATER KENT to-day.

MODEL 35, Powerful, six-valve, FULL VISION Dial receiver shielded cabinet.

Distributors,  
**C. & A. ODLIN & CO., LTD.,**  
WELLINGTON  
New Zealand



# Eliminate "howlers" who contribute nothing but "squeals"



S. P. Andrew, Photo.

Rt. Hon. J. G. Coates  
Director of Station REFORM A1.

**D**URING the past three years the Coates Government has "functioned" efficiently and without "oscillation," in spite of opposition "static" and "interference."

The "service" to the Dominion has continued without "fading" and with generally improved results.

Maintain this "high standard of transmission" by "building up" a strong Reform Party in the new Parliament.

"Eliminate" the "howlers" !

## For "Perfect Performance" and "Best Reception"

### "TUNE IN"

**with the REFORM Programme which caters  
for all classes.**

**The Proximity of Aerials.**

2FB (Northland) writes: "Would two aerials crossing one another affect one another?"

The effect, if two sets of equal strength were connected up, would be to weaken the signal strength of both, one acting as a blanket to the other.

If a stronger and a weaker set were each connected the strong set would become slightly weaker and the weak one stronger. The explanation lies in the fact that a set to receive signals must oscillate and these oscillations go on the air. If the set is correctly neutralised these will not interfere with other sets except as in the case just mentioned. The set on each aerial must be tuned to the same frequency, that is to the same station. The oscillations from the stronger set are picked up as well as the original signals from the station and further amplified.

# A Corner for Beginners

— By Observer —

**Signals Becoming Fainter.**

"I HAVE a No. 2 Brownie crystal set which has been working all right till a few days ago—now it can hardly be heard, sometimes not at all, while on a wet day it works wonderfully." The writer then adds that aerial, earth, phones, crystal and cats whisker are all right. However, this last statement

is open to doubt, for what else could there be to go wrong? The clue seems to be in the last few words quoted—wet weather.

Water is a good conductor and if a poorly insulated aerial wire touches anything wet running to earth the signals are lost. Conversely, if water, or something wet, comes between two ends of a broken wire the ends become electrically connected.

Applying this idea to the problem, it would seem that either the aerial or the earth wire has broken within the insulation and that during wet weather the insulation, becoming wet, acts as a conductor. If it is rubber covered the rubber would have to be broken to admit the water.

Again the connection between the ground wire and the ground may have become corroded and only when water soaks between the clamp or wire and the ground is there a connection. The earth, too, may be in a dry place needing watering. The connection between the lead-in and the aerial may be corroded, and the same may be happening as was suggested with the earth. This connection should be soldered. It is then impossible that such a phenomenon should occur.

It is fairly evident that the trouble is a faulty connection outside. All these should be carefully examined.

**Economical Valves.**

THE next query concerns the duplication of a 6-volt storage battery by four 1½-volt dry cells. The valve used was UV200, requiring 1 ampere of filament current at 5 volts and 22½ volts plate. To use dry cells for this valve would involve a great expense—the consumption being so heavy. It is doubtful, given the 22½ volts plate, if anything better than the double-grid valves can be recommended. There is a splendid valve, "Micro-Bigril," which may be difficult to obtain, but which gives splendid results with a consumption as low as .06. Philips make two double-grid valves in the two and four volt series, A241 and A441, which should give good results with low plate voltage. They, too, are very economical.

**Indoor Antennae.**

"WHAT is the best indoor antenna (aerial) for a crystal set, and what range would this set have with a one-valve amplifier?" A new indoor antenna was described on page 28 of "Radio Record," October 26, 1928. This should be worth trying and reporting on.

Other indoor antennae are: Wire wound round the wall, across the ceiling, or under the carpet, or an antenna similar to an aerial (outside antenna) strung in the roof. None of these latter are as good as an aerial.

As for range, users of a crystal and one-valve amplifier should not expect more than the local station, particu-

larly if an indoor antenna is to be used. A little while back Australian stations, at loudspeaker strength, were reported from a crystal and two valves, but this is not the rule, and nothing but the local station should be expected from such an outfit.

**Concerning Push-Pull.**

ANOTHER correspondent, W.P. (Dunedin), asks several questions regarding push-pull amplification. Readers are referred to the constructional article by "Pentode," regarding this method of amplification, but the following are relative here:

(1) "Are there any disadvantages, or objection, to 'push-pull' L.F. amplification?" No.

(2) "Can 'push-pull' transformers (with five terminals) be used as ordinary ones—in their proper places by ignoring the centre tappings?" Yes—but the volume is not so great as if an ordinary transformer were used.

(3) "Would 'push-pull' be all right in last stage of the 'Browning Drake' receiver in 'Radio Listeners' Guide'?"

This method of amplification, used instead of the final audio valve would give additional volume and greatly improved tone. It is well worth while embodying this method, especially where only 120 volts are available for the final valves.

(4) "If two 2-mfd. condensers are strongly recommended in a circuit using B battery, are they necessary, or advisable, when using B eliminator?" No, they are embodied in the eliminator.

(5) "Is it characteristic of the B-D. circuit that it is harsher in tone than other four-valve circuits, or is it due to home construction?" There is no reason why B-D. should be harsh, especially if the push-pull amplification is used. According to Mr. C. C. Fear, a local authority, they are unequalled for volume and tonal quality. Home constructors are liable to cause harshness by having an unsuitable valve in the final stage. A power valve with anything up to 400 volts plate (at least 150), or push-pull is an essential of good tone.

**Paralysed Valves.**

C.C. (Pukekohe), writes asking advice on the following:—"Due in some cases to misuse, such as, for example, the use of too much 'A' battery, and in other cases the result of many months of service, 201A valves become paralysed, either wholly or in part. This paralysis is generally shown by a gradual weakening of signal strength, although the batteries appear to be at normal strength. Before throwing away these valves it may be as well to try the effect of rejuvenating them, which can be done in a very simple way. The only materials required are a UX valve socket, an old 'B' battery, and two short lengths of wire.

"The valve is placed in the socket, and two wires from the filament binding posts are connected across 22½ volts on the 'B' battery for a period of 45 seconds. The valve is then taken from the socket and replaced in the set, from which the 'B' battery has been disconnected, and the filament rheostat is turned on full for a period of about ten minutes or longer.

Great care should be taken to see that the valve does not remain connected across the 22½-volt battery more than 45 seconds or it will be burned out. An old valve rejuvenated in this manner will frequently give as good results as a new one."

New!  
Different!



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THERE is no waste space inside the Columbia Layerbilt "B" Battery. Every available inch is occupied by useful elements... flat layers of current-producing materials that make it by far the longest lasting, most powerful of all heavy-duty batteries.

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Columbia Batteries add greatly to the pleasure of radio. In the end they are far more economical than any others.

## Columbia RADIO BATTERIES

GREATEST CLARITY-  
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The original reads as "B battery" in the early part, but this is understood to mean "A." The method is suitable with Radiotron products if put into operation as soon as the valve becomes paralysed, but Amalgamated Wireless inform us that 201A very rarely becomes paralysed, and that a rejuvenated valve will not give the results a new one will. Still, the experiment is worth trying—it cannot do any damage.

#### Circulating Resistance.

**T**HERE is no easier way to reduce the life of a valve than by burning the filament at a voltage above that recommended by the makers. It often happens that the voltage on a battery is slightly higher than it should be and unless a resistance is placed in the circuit, trouble is bound to occur. The most suitable resistance is perhaps a variable rheostat, as this can be adjusted as the voltage in the batteries drops.

However, if the rheostat has a too low resistance its effect will be lost. The correct make is easily obtainable by the following method. The difference in voltage between the valves, or between the valve and the battery should be ascertained; this may be called V.

The filament consumption of the valve in question can be obtained from the carton—call this A. The resistance required (R) is then  $V/A$ , or voltage divided by amperage. This will give the result in ohms which should be approximately the resistance of the rheostat.

As the current consumption of the valve is a decimal, it is necessary to multiply both the voltage and the amperage by 100 before endeavouring to work out the problem.

Supposing a six-volt accumulator is to be used with a valve, which requires five volts on the filament. The consumption is .06. Multiplying each by 100 we have 100 divided by 6, which gives the resistance, 16.2-3 ohms.

If more attention were paid to this detail the life of many valves would be more than doubled.

#### Polarity of Speaker.

**W**HEN the raw B + is used as the + speaker terminal, care has to be exercised to see that this connects with the - terminal of the speaker. If connected round the wrong way for some time, the magnet becomes demagnetised, and seriously impaired. A sure method of testing polarity is to screw the diaphragm of the speaker till it rattles, or if the set is not strong enough to cause a rattle until it wavers on the border of audibility. Now, reverse the terminals of the speaker; if the music comes through clear, the polarity has been reversed. Put the terminals back as they were before the experiment was conducted. They are now correct. If on reversing the terminals, the speaker continues to rattle, this indicates that the terminals were previously wrong, but are now right. Connect as they are. Having concluded the experiment, the diaphragm is adjusted to give desired volume and tone.

However, the safest way is to embody an output choke, and fixed condenser, as shown on p. 118 of the Radio Listeners' Guide.

**W**HEN the French radio station at Toulouse is in need of a new announcer, the listeners are called upon to elect him.

# Children's Sessions

## AT 1YA.

**TUESDAY, NOVEMBER 6.**—Stories and birthday greetings from Uncle George, and cousins, singing, reciting and playing the piano.

**WEDNESDAY.**—Uncle Tom in charge with more happy songs and stories. Cousins will sing and recite and the radio postman will pay his welcome visits.

**THURSDAY.**—Hurrah for the Bayfield Choir, after a month's absence. Peter Pan will have puzzles, conundrums and some new games for them. Plenty of fun and laughter.

**FRIDAY.**—A happy hour with Nod and Aunt Jean and some little cousins. Listen for Aunt Jean's good-night song on the bells.

**SATURDAY.**—Cinderella has Sunny Jim assisting her to-night, so all aboard for Radioland at 6 o'clock sharp, and keep your little ears open for the quaint pieces and jokes they have for you.

**SUNDAY.**—The programme to-night will be a song service, conducted by Big Brother George, assisted by cousins from Howe Street Brethren Sunday School.

## AT 2YA.

**MONDAY, NOVEMBER 5.**—The girls of the Wellington Technical College are coming to sing to-night. Their singing is always enjoyable. The choir will be conducted by Mr. V. Evans. Of course, Uncle Jeff and Aunt Gwen will be there with greetings, stories and puzzles.

**TUESDAY.**—Four little girl cousins have a jolly little programme for to-night—songs, recitations and banjo-mandolin solos—but first the good old cock will crow his welcome to all radioland—then Brother Jack will greet you.

**THURSDAY.**—There is a treat in store to-night—so listen carefully. Some of Miss Edna Sneddon's little pupils will play pianoforte solos, and Cousin Molly has two little poems. One is about some little piggies. Cousin Vermont, who is such a wonderful bird and animal imitator, and who loves to give little children pleasure, will give Farmyard Melodies—yes, and Aunt Gwen will be there, too.

**FRIDAY.**—The children's hour to-night will be relayed from the Senior Boys' Presbyterian Orphanage, Berhampore. The boys will have some jolly songs to sing. Uncle Ernest will be there with his cheery greeting, stories and poems, so a happy little hour is waiting for the little ones.

**SATURDAY.**—Pupils of Mrs. Thomas will help to entertain radioland to-night. Cousin Constance has been specially requested to sing as her singing always gives little cousins so

much pleasure—birthday greetings and stories—Uncle Toby and Aunt Gwen will have all ready at six o'clock, so listen for the clock to strike.

**SUNDAY.**—The Children's Song Service will be conducted by Uncle Ernest assisted by St. Mark's Sunday School Choir under Mr. E. W. Marks.

## AT 3YA.

**MONDAY, NOVEMBER 5.**—In response to many requests, "Scatterjoy" is having another night in Hawaii—"On the shores of Honolulu"—with the native song of the lei girls, sung by Cousin Margery. The Radiant Three-oh will sing "Over the Moonlit Waters," the Melody Maids helping with songs and ukulele music.

**WEDNESDAY.**—A full programme of good things to-night, given by Mother Hubbard and Uncle Peter. "The Three Old Maids of Lee" giving a sketch from the favourite book "Uncle Tom's Cabin."

**THURSDAY.**—Uncle Hal well in the running now, and a host of good stories and songs he has in his case. Cousins Phyllis, Roy and Joan and Billy coming along to help.

**FRIDAY.**—Big Brother on deck with some entertaining stories for you, and Mr. Maxwell Keys will tell you about that romantic body of men, "The North-West Mounted Police."

**SATURDAY.**—Chuckie and Aunt Pat, and our little friends from the Wharenu School to keep you happy and bright to-night.

**SUNDAY.**—The Children's Song Service will be held to-night, and a talk to the children about "John Bunyan" will be given by Mr. Wm. Machin. Hymns will be sung by the children from the Moorhouse Avenue Church of Christ Sunday School.

## "Beau Ideal" Competition

**R**ECENTLY an interesting competition was announced over the air by Mr. H. C. South, whose interesting talks on "Books, Grave and Gay" are regularly looked for by a wide circle of listeners. The competition involved the hand-printing of the title "Beau Ideal" on a sheet of paper, and the prizes were four autographed copies of Mr. P. C. Wren's work "Beau Ideal." The entries proved very voluminous, and the judges, Messrs. Hanna and King, of Wellington, finally made the following awards of the four autographed books:—

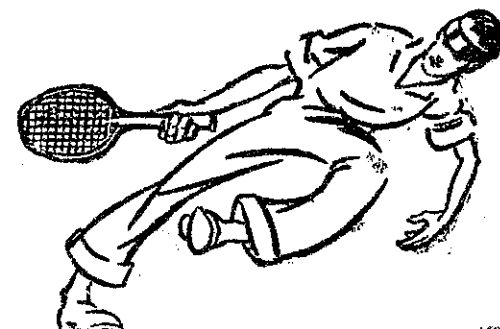
W. G. Harding, Khandallah.  
Ken. Dennett, Wellington.  
G. W. Ford, Invercargill.  
P. Buist, Wellington.

The next six in order of merit—very close up—were:—

Miss K. Ellis, Gisborne.  
Miss Rita Sanson, Normanby.  
T. B. Burton, Alexandra, Central Otago.  
R. McIntyre, Alexandra, Central Otago.  
H. J. Moss, Khandallah.  
J. C. Orman, Wellington.

**T**HE competition was very illuminating in its revelation of the widely-scattered nature of the radio audience that enjoys the Book Talks from 2YA. Hundreds of entries were received from towns all over New Zealand—from the North Cape to the Bluff. The main towns covered by competitors were as follows:—Dunedin, Waharoa, Nelson, Hawera, Wellington, Spotswood, Invercargill, New Plymouth, Christchurch, Marton, Te Aroha, Wanganui, Master-ton, Hakataramea, Auckland, Westport, Gisborne, Blenheim, Porangahau, Motatau, Huntly, Pukehuia, Hautapu, Coromandel, Kumeroa, Eskdale, Stratford, Whakarongo, Pihama, Fordell, Whakatu, Eltham, Norsewood, Morven, Tokomaru Bay, Alexandra, Te Tua, Shannon, Wyndham, Waikokowai, Timaru, Utiku, Otaki, Pakatoa, Horopito, Waihi, Lyttelton, Hicks Bay, Otane, Rawene, Otorohanga, Owaka, Waverley, Taupiri, Nukumar, Taradale, Martinborough, Glenhope, Awatere, Eketahuna, Otahuhu, Nuhaka, Woodville, Palmerston North and Waikiekie.

**R**AUDIO has passed the novelty stage. It is classed as more than amusement. It is an economic and education-force, and as such it is one of the great permanent industries.—("Daily Province," Vancouver.)



**Emmco**  
made a  
wonderful  
stroke



**W**HEN EMMCO made their famous line of Battery Eliminators, they made a wonderful stroke. Emmco Battery Eliminators banish care, worry and trouble. They give you **CONSTANT, SILENT POWER**, permanent and unfailing. Bring your radio set up to date by installing an Emmco Eliminator.

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Abel Smeeton, Auckland; Thomas Balingier, Wellington; L. B. Scott, Christchurch.

# THE WOMAN'S POINT OF VIEW

By "VERITY"

## About Plums

A DELICIOUS and simple dish is plum cream. Take 1lb. of plums, stone them and blanch the kernels. Place them in a saucepan with 1lb. sugar and  $\frac{1}{2}$  pint of water. Cook slowly for about a quarter of an hour and add a little almond flavouring. Sieve the mixture and when cold stir in  $\frac{1}{2}$  pint of whipped cream and the white of an egg. Rinse a mould in cold water, pour in the mixture and leave in a cool place. Turn into a glass dish when set, and surround with stewed plums.

Victoria plums are particularly good for bottling, and the following is a very simple process: Wash the fruit and put into fairly large jars. Fill with cold water and place them in a pan of cold water up to the neck of the jars. Bring gently to a boil and simmer for ten minutes. Allow to cool, and when quite cold pour on a covering of hot mutton fat. This is the countrywoman's substitute for patent airtight jars and is quite effective. Finally tie down with parchment covers.

Candied fruit is always a popular sweet. Pick the plums on a dry day and choose under-ripe fruit. Wipe it well and leave a little of the stalk on each. Make a syrup of 1lb. of sugar and half a pint of water and boil together for 15 minutes until the fruit is tender but not broken. Strain the syrup from the fruit and place the plums on a sieve in a warm place to dry. Cover them with icing sugar and when dry store in a dry place in an airtight box lined with white paper and place paper between the rows.

Plums make a very good foundation for chutney. Wash and stone 2lb. of plums and place them in a saucepan with 1 pint of vinegar and half a pound of brown sugar, and boil gently till the sugar melts and the fruit is tender. Then add 1oz. of chopped garlic, 1oz. ground ginger, 1oz. salt, 1oz. pepper, and 1lb. seedless raisins, and simmer gently until the mixture thickens, then pour into warm jars and cover.

## GOLF OUTFITS DE LUXE.

SMART golfers like every detail of their sports outfit to correspond, and the most luxurious form of this craze for matching accessories is the golf-bag of snake or lizard skin, which accompanies brogues, belt, and button-hole of the same leather. If the golf course is a chilly spot, a short coat of skin to match, with large pockets, may be added in winter.

## Cooking Vegetables Some New Ideas

IT is said that British people do not understand as well as foreigners how to cook vegetables. In England more meat is eaten than on the Continent. In France, for example, families live on vegetables the whole week, only having meat on Sunday. Naturally they discover a variety of ways of cooking the humblest vegetable. Here we cook peas in water, and they cannot possibly be eaten alone. But by cooking them in butter they are a substantial meal by themselves. In the same way cabbage is cooked in salt and water, whereas by braising it with a little bacon it can be made into a meal.

Peas can be made into a delicious meal by cooking them with onions, a little butter and sugar, and some chopped lettuce. If possible, a casserole should be used. Only enough water to cover the bottom of the dish is required. The salad will provide enough liquid to cook the peas. The lid of the casserole should be kept hermetically sealed. As an extra delicacy to the dish a spot of cognac can be used.

Artichokes are another vegetable that can be made into a meal if their hearts are served with a puree of mushrooms. Ordinary French beans can be finished off with a little cream.

## Recipes

### Cake for Tea.

EVERYONE likes a sponge cake, so try this way of filling one the next time you have friends to tea.

Buy—or make—a big sponge, cut it into three slices from side to side. Then spread the first slice on top, with chopped ginger, the second with whipped cream, and the third with a syrup made with the ginger syrup mixed with cream. Replace the slices, one on top of the other, and allow the cake to stand in a cool place for about an hour. The chopped ginger on the top slice makes an attractive decoration.

### Tomato Jelly.

THIS is delightful with cold ham, bráwn, or many other cold things.

Heat a tin of tomato puree, and then add about two ounces of gelatine, which has been soaked in cold water, also a teaspoonful of salt, one of soft sugar, a dessertspoonful of lemon juice. Stir well, pour into a mould, and allow to set.

### Sweetbread Salad.

PARBOIL enough sweetbreads, chill them in cold water; take away every bit of the fat and skin, and put them into boiling water and stew very gently for about twenty minutes. When quite cold, cut into suitable bits. Line

a salad bowl with sweet green lettuce leaves, mayonnaise the sweetbreads and them down carefully on the leaves, and cover them with more lettuce leaves. Do not pour the dressing over the sweetbreads, but gently turn them over in it so that they are no more than coated. The tiniest touch of shallot to the mayonnaise will be helpful.

### A Meat Salad.

CUT some very thin slices of lean beef or ham, and dress them with a mixture made of chopped anchovies, shallots, parsley, mixed with equal parts of olive oil and lemon juice, and a little made mustard. Make the salad at least three hours before eating. It should be decked with tiny bits of the fat.

### Two Recipes for Aged Peas.

PEAS are one of the most popular of our summer vegetables, but their triumph is short-lived. Here are two good ways of disguising their age for tasty supper dishes.

Throw the peas into boiling water, previously salted, and cook till tender.

Pour off the water in which they were boiled all but about a tablespoonful, and stir in a couple of eggs that have already been well beaten. Add a nob of butter and shake the pepper pot over them, and stir continuously for three minutes, when the eggs will have creamed nicely. Served on buttered toast, this snack looks and is appetising.

Aged peas with cheese are good. Strain off the peas and stir in a little butter and pepper to taste. Turn them on to rounds of buttered toast and over them spread cheese sauce made in the following manner: Put grated cheese and nut of butter in saucepan with pinch of salt, a dab of made mustard, a little milk (or cream if you have it), and half a teaspoonful of cornflour. The latter gives the sauce a creamy look when cooked.

Stir all the ingredients well, and when of a thickness to drop slowly off the spoon it is ready to camouflage the peas.

Pop the dish under the grill for a second or two to give the cheese a nice brown, and then sprinkle with chopped parsley. Both these recipes provide for two persons.

## CAPED TRAVELLING COAT.

A travelling coat which can also be worn over sports clothes, or as a motoring wrap, is made from coarse tweed in beige and brown checks, with facings of plain beige. It is cut like an "Inverness" cape, with a wide shawl collar, and loose sleeves, which button into place, and has deep patch pockets which are finished with buttons and straps. Like other tweed coats of the same type, it is unlined, so that, although sufficiently warm, it is very light,



## New Lingerie Models

THE uneven hem is a feature of some of the newest lingerie models. A dainty shell-pink georgette nightdress, its scalloped hem edged with narrow lace, has a circular dip at the back in the manner approved by Fashion for many evening frocks. Like the majority of nightdresses, it is sleeveless, and a girdle of pink satin finished with a rosette encircles the waist.

Coloured lace or net to tone with the georgette, silk or satin that is used to fashion the rest of the garment, is a popular trimming for up-to-date lingerie. There is a fascinating cardigan, too, made from rose-coloured lace, with a border of georgette the same shade.

Pyjama suits with "jumper" tops are in great favour. A new model has a bright floral crepe de chine jumper with an attractive jabot in front, the trousers being of plain washing satin.

Silhouette-shaped Princess slips of washing satin are an inspiration, since there is no tiresome fulness to mar the fit of the frocks worn over them.

For evening wear there are "backless" cami-knickers of georgette in delicate shades, and soft satin directoire knickers trimmed with pearl, silver, or diamante embroidery.

For the chilly days dainty hand-made lace wool undergarments, in some cases lined with chiffon, are available.

## CROCHET BUTTONHOLES.

BUTTONHOLES which closely resemble real flowers, are out of favour just now, and, instead, unlikely posies of spotted or printed silks decorate coat lapels. Flat flowers, with petals of cream-coloured crochet, bound with cream and blue spotted silk, make an unusual finish to an ensemble of blue hopsack and spotted crepe de chine, and the frock has a narrow belt of crochet, also bound with the silk.

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



DEAREST:

Labour Day, 4.30 p.m., on the top of the Paekakariki Hill of Difficulty, was of a beauty the memory of which will gild many triste hours of doubt or disaster. Wide expanse of water flashing in the glow and glitter of New Zealand atmosphere at its best and brightest, the far line of horizon quivering into radiant vapour where it met the vanishing point of the glint of sunlight on the sea, that unblazed trail which leads, perchance, to some island of the blessed or twilight of the gods.

ALL this, and more also, to be observed at leisure by those who had eyes to see, as the long line of motor-cars queued up, tightly wedged into tricky procession, impatiently awaiting pleasure of debonair driver of a huge lorry which, laden with sacks bulging and bulky enough to have been looted from the cave of Ali Baba, had chosen this untoward hour to block the path of progress, and proved as difficult to dodge as a doubtful past or the butcher's bill. When at long last our turn came, the indolent Jehu smiled derisively at our headlong effort, on apparently only one wheel, to reach the other side of the hill, which, but for Richard's admirable handling of the car, might well have proved the other side of Jordan.

MANY waters cannot quench love. Are we not assured of it in Holy Writ; and we hear much of the

emotion from our youth up, particularly, perhaps, in the sweet and twenties. Now comes a play, "Many Waters," the plot hinging upon the love of a man and his maid, belonging to the "working class," as it is termed, an arbitrary distinction in these turbulent days when the old order has changed and all sorts and conditions struggle for a living. Introducing in the first Act a middle-aged couple, the action is switched back to the nineties, and they are shown in their courting days, clad in the droll fashion of that sartorially inartistic period. After marriage in a registry office—in which officers, witnesses and whole entourage are capitally presented—there comes the "everydayness of this workday world"; domestic tribulation, loss of money, as vulgar and precious a possession to one class as another. A cherished daughter finds herself "in trouble," and by quietly dying, finally and irretrievably cuts the Gordian knot created by her lapse from the conventional. Plodding on, we come upon the elderly lovers as they appear in the opening of the play: cheerful, unself-conscious, choosing a little musical comedy to enliven what they regard as a humdrum life, not realising that their history holds those elemental forces of comedy, tragedy, mirth and courage that down the ages

have proved the inspiration of painter and poet.

INTERESTING to hear that the Hawthorndale prize for the best imaginative work during the past twelve months was awarded to Henry Williamson for "Taris the Otter." One remembers with delight this author's tender delight in England's loveliness and the shy woodland ways of birds and beasts, the sympathy and beauty of his analysis of the outlook of a child in that revealing book, "The Beautiful Years." So that one finds him a fit compeer of Mr. Sean O'Casey with his "Juno and the Paycock," and Mr. R. H. Mottram with that great study of French character in war-time, "The Spanish Farm"; both of them winners of the coveted honour, which has been existent since 1919 and is open to anyone up to forty years of age.

WITH the accomplished and cosmopolitan Francesca, I found myself at the recital given by Miss Vera Moore in the Concert Chamber of the Town Hall, where the audience, made up of the musically elect of Wellington, accorded the artist an extremely sympathetic and receptive hearing.

CLAD in flowing rose-coloured draperies, fresh from triumphant experience in her own hown town, the artistic Edinburgh of our Dominion, Miss Moore appeared a mere slip of a girl, with a retiring manner and entire absence of self-consciousness. Her art is virile, intellectual, of intuitive comprehension and accomplishment, and alike attuned to Debussy's most captivating theme and the extraordinary range and brilliance of the Schubert Sonata in A minor.

REVERENT interpretation and ability to convey their majestic beauty and devotional spirit marked the pianist's rendering of two Bach Chorales, forerunners of our hymn tunes, and arranged by Leonard Borwick, at one time Miss Moore's teacher, who did much to encourage and foster the talent of this brilliant girl. Francesca, critical and knowledgeable in matters musical, liked best the Chopin Etudes and group of old-world studies, played with amazing balance, clarity and technique; while, for my part, I found entrancing Ravel's "Barque sur l'Océan," which seemed to envision in sound a light, bright painting of the modern school, instinct with glinting shadows, movement and sunlight shot with gold, welded into a vivid, impressionistic whole.

Your

ANNABEL LEE.

## Books.

### COMFORTLESS MEMORY. (Maurice Baring.)

ONCE upon a time Robert Browning, the poet, wrote some dramatic rhymes concerning a man who, to save a friend from ruining his life through infatuation for a light woman, averts the disaster by taking the lady for himself.

"An eagle am I with my fame in the world!  
A wren is he with his maiden's face!"

The theme of Mr. Maurice Baring's recently published "Comfortless Memory" is so identical with that of the poem that one guesses whence came inspiration, more particularly when a line of it appears on the title page.

The narrator, middle-aged writer and consummate man of affairs, on the crest of a wave of popular adulation, enters the romantic arena in order to rescue a youthful painter of promise from the wiles and wickedness of Jenny True, blue-eyed, of a grace surpass-

ing, and living the gay life indeed on the fringe of frothy Continental society. Succumbing to the sophisticated advances of the elderly Orlando, and too late discovering his philanthropic motive in wooing her not ungenerous favours, the frail and fascinating quarry indignantly reproaches him in words as pertinent as those of the poet:—

"Never mind that youth!

What harm had I done to you?"

That Mr. Baring writes with ease and graceful distinction his earlier books proved beyond cavil. His latest novel is mostly concerned with the emotion of love of one kind and another, never of a very sublime quality, and leading to much violence of speech and action, finally resulting in the death of the lovely protagonist.

As a presentment of a cosmopolitan society foregathering in various Italian towns, the book has a vividly descriptive touch; but Jenny, the declassée, charmer of hearts and full of posings and posturings as Lady Hamilton herself, lacks that semblance of reality which, failing to achieve, the most accomplished raconteur fails to scale those "heights by great men reached and kept."—R.U.R.

of a brewery, but in time of war he was a brave and noble leader. He fought in the War of the Roses.

"Aurora Borealis is the Northern Lights. They burn the oil out of the sea.

"Who introduced Christianity?—Martin Luther.

"A syllable is that which can be pronounced with one sweep of the tongue.

"The probable cause of earthquakes may be attributed to bad drainage and neglect of sewage."

### As the Years Go By

Let me grow lovely, growing old;  
The many fine things, too,  
Laces and ivory and gold,  
And silks need not be new.  
There is great beauty in old trees,  
Old streets and ruins old;  
Why should not I, as well as these,  
Grow lovely, growing old?

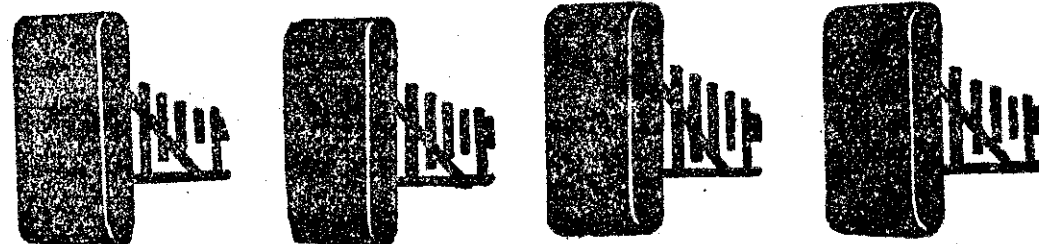
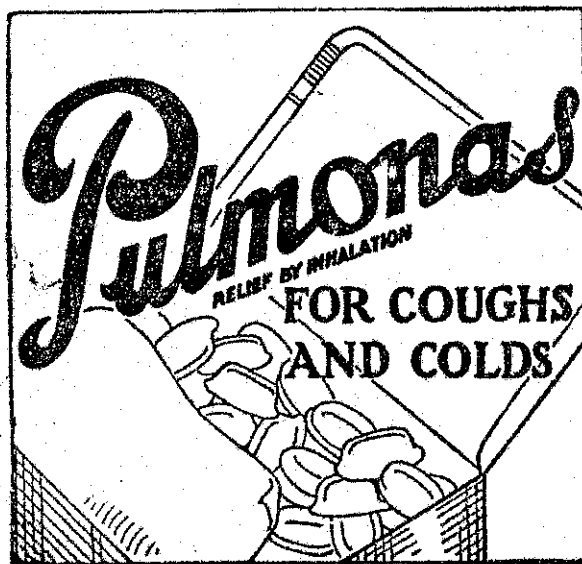
### Schoolboy Howlers

"WHAT did the Israelites do after crossing the Red Sea?—They dried themselves.

"The climate of Europe is neither too hot nor too cold, but just nice. (Another boy describes it as 'sober, temperate, and mild.')

"The Protestant religion is divided into two parts, Whigs and Tories. The Tories go to church and the Whigs to chapel.

"Oliver Cromwell, surnamed Commonwealth . . . was the only son



## HAVE YOU A FRIEND INSIDE YOUR CAMERA?

IT'S like putting a friend into your camera to load it with Kodak Film. When the light wasn't very good it tries hard not to say "I told you so." When the exposure was twice as long as it ought to have been the film doesn't give up trying, and present a black frowning negative. It does its best for you, six good deeds in one day sometimes. You can always count on it. It is as unfailing as friendship, and as ready to make allowances. It is easily recognised in its cheerful yellow carton.

# KODAK FILM

All

OF ALL KODAK DEALERS

# Features of Next Week's Programmes

## 1YA Notes

ON Tuesday evening excerpts from Gluck's Opera, "Orpheus," will be presented by Madame Irene Ainsley's operatic party. "Orpheus" has been well described as a complete masterpiece, and one of the most astonishing productions of the human mind. First performed in Vienna it was quickly presented in Paris, where it has been the custom to assign the title role to a tenor, although originally it was written for a contralto.

The studio orchestra will contribute a number of selections, including "Jolly Robbers Overture" (Suppe), "By the Blue Hawaiian Waters Suite" (Ketelby), the orchestra's novelty, "Bells of St. Mary's" (Adams), and selections from the musical comedy "Sunny" (Kern).

The well-known lecturer, Mr. A. B. Chappell, M.A., having concluded his talks on "Old New Zealand," will commence a new series of lecturettes, taking as his subject "The Maori," and his first talk will be upon "The Maori's place in the human family."

THE principal vocalists on Wednesday evening's programme will be the "Minster Quartet," comprising Miss Gladys Hoskin and Maida Davison, and Messrs. A. L. McPherson and Roy Stephenson. These vocalists will be heard in a variety of quartets and solos, while also on the same programme will appear Mr. F. W. Barker, in elocutionary and humorous selections. The concluding portion of the programme will be taken up with a gramophone lecture-recital by Mr. F. W. Strong, well known in gramophone circles in Auckland.

At 7.15 on Thursday evening, Mr. L. Griffiths, F.R.H.S., will commence a series of gardening lecturettes, and has chosen for his first talk the title "Gardening Tit Bits."

THE popular Lyric Four will contribute the major portion of Thursday evening's programme, their selections including "Rockin' in de Wind," "A Night of Love," "Mother Goose Medley" and a variety of solos. Mr. Alan McElwain will entertain listeners with further humorous numbers from his extensive repertoire. Those old favourites, "The Bohemian Duo," will make a welcome re-appearance before the microphone in popular songs and melodies. On the instrumental side of the programme will be the Auckland Trio, Mr. A. S. McLauchlan (xylophonist) and a number of electrically reproduced gramophone records.

THE vocal portion of Friday evening's programme will be given by the Clarion Quartet, who will contribute an all-English programme, their items including "Heart of Oak," "The Lass with the Delicate Air,"

"The Second Minuet," "Rocked in the Cradle of the Deep," and a "Sea Medley" arranged by the Clarions. The well-known elocutionist, Mr. J. F. Montague, will contribute to the humorous side of the programme, while instrumental selections will be played by the studio orchestra, and electrically reproduced records.

THE vocalists on Saturday evening's programme include Miss Christina Ormiston (soprano), and Mr. Clinton Williams (baritone), whose re-appearance before the microphone will be welcomed by listeners. On the instrumental side of the programme will be the Auckland Trio, whose numbers include "Tannhauser" selection and "Anitra's Dance." The concluding portion of the programme will be given over to the broadcasting of dance music.

Sunday's church service will be relayed from the Church of Christ,

of exceptionally pleasing quality, will again demonstrate his ability as an artistic singer of classical songs. At the piano, Miss Alice Duff, a talented executant, will play two of Chopin's compositions, while on the elocutionary side, Mrs. Kathleen Shaw will entertain with specially selected numbers. At 7.40, Mr. H. C. South will deliver another of his entertaining and informative talks on "Books, Grave and Gay."

ON Tuesday evening Mr. Doug.

Stark, the clever Scottish humorist, will present two of Sir Harry Lauder's most popular numbers and an original sketch. Miss Myra Sawyer, soprano, will sing the popular "Vainka's" song, and a beautiful little composition, "An Indian Squaw's Song." Mr. William Boardman's numbers will comprise the "Bedouin's Love

local teacher of elocution will entertain with some dramatic and humorous items. The combination of artists known to the 2YA audiences as the "Mellow Fellows" will appear in a budget of new melodies and stories. Those charming new numbers, "Together" and "Mary Ann," will be in the hands of the Tenor Fellow, with vocal accompaniment by the other Fellows, and will be an exceedingly "singable" item. "That Old Bush Shanty of Mine" and the "Song of the Clock" will be favourite numbers, and a monologue, "Thinking," will provide, along with fresh stories, a good programme. The other concerted numbers will be "Since You Whisper'd 'I Love You'" and "My Blue Ridge Mountain Home."

THE Philharmonic Trio and Mr. and Mrs. Albert Russell will be the vocalists on Friday evening. The Trio are established favourites with listeners, while Mr. and Mrs. Albert Russell, who specialise on the lighter side of vocal entertainment, are hosts in themselves. Their appearance before the microphone on Friday evening will be awaited with the keenest interest by listeners throughout the Dominion, in eager anticipation of what will assuredly prove a delightful entertainment.

Mrs. Ellison Porter's brilliant soprano voice is particularly good in bright songs. She is singing "Dancing Days" (Dickson), a new number, and later "Vale" (Russell), in duets with Miss Madge Freeman, in "Sing, Joyous Bird," with Mr. Phillips, and with Mr. Edwin Dennis in what is probably one of the greatest of operatic duets, "What then, Santuzza," from "Cavallerie Rusticana." Miss Madge Freeman's rich quality voice is admirably suited to "Ships that Pass in the Night" and that very fine sea song, "Glory of the Sea." Mr. Edwin Dennis is singing "Au pays" in French. Mr. Dennis has made this song peculiarly his own since the days of Paul Dufault. It is a wonderful item, descriptive and thrilling. There will be a later bracket of songs, "Sing, Break into Song" and "I Did not Know."

At 7.40 p.m. there will be a lecturette by Mr. N. R. Jacobsen, who is to speak on "How We Learn."

**"DIGGERS' NIGHT"**—That is all that need be said concerning the bill of fare for Saturday evening. Be sure to listen in to the Diggers.

ON Sunday at 3 p.m. there will be a relay broadcast from the Town Hall of the addresses delivered at the Armistice Day Committee's public meeting. The children's Sunday evening song service at 6 o'clock will be followed by a relay of the evening service at St. John's Presbyterian Church, the preacher being Rev. J. R. Blanchard, B.A. At 8.15 approximately

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*It is also wrong to control the volume in the audio stages as the detector and radio frequency valves may be running overloaded, although only medium volume may be issuing from the loud speaker.*

West Street, the preacher being Mr. James Garrett. This will be followed by a programme of selected items from the studio.

Song," an old favourite, and Haydn Wood's "Sea Road." The well-known duet, "Still as the Night," and a "Nocturne" will be sung by Miss Sawyer and Mr. Boardman. Interpolated with studio items will be some of the latest Columbia gramophone releases supplied by Messrs. Bannatyne and Hunter.

THE instrumental music for Thursday evening will be provided by the Wellington Municipal Tramways Band. On this occasion the band will present a programme of classical and popular items. Amongst the former will be the celebrated "Ruy Blas" overture, the minuet from Haydn's "London Symphony," and a symphonic poem, "Cariolanus," while the popular items will include the marches "Ravenswood" (by Rimmer) and "Vale of Avon" (by Vernon), the selection, "Beauty of Bath" and a morceau "Rustic Revels." The popular waltz, "My Treasure," which has recently been recorded by a well-known company, will also be a feature of a programme.

Miss Maude Tarrant, a well-known

## 2YA Notes

A BRIGHT and varied programme has been scheduled for Monday evening. There will, of course, be a wealth of instrumental melody, and this will be supplemented by a strong voice programme. Mr. John Prouse, the veteran baritone, whose cultured voice seems impervious to the march of time, will be heard in some delightful old English folk songs. Miss Monica Malfroy, a very charming lyric soprano, has selected some dainty numbers. Miss Evelyn Robinson, who has been heard before from 2YA and recently from 1YA, is one of Wellington's rising contraltos, and on this occasion her four numbers will include three of Mallinson's well-known songs. Mr. Eric Rishworth, tenor, who possesses a voice

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the Sunday evening studio concert will commence featuring the Wellington Ladies' Trio.

### 3YA Features

**M**ONDAY evening's concert will, as usual, be contributed mainly by a brass band, this time the Christchurch Municipal. A bright and varied programme has been arranged by the conductor. Mr. Charles Lawrence, always a radio attraction, has been engaged for the evening. His items will be songs at the piano, to his own accompaniment. Miss Kathleen Chapple, soprano, will sing, and will also give a recitation to piano accompaniment. "That Cat." Three mezzo-soprano songs will be sung by Miss Nellie Billcliff. Mr. Ad. R. Thompson (tenor) and Mr. Syd. Armstrong (baritone) are two other vocalists for the evening.

**T**UESDAY (usually the silent day for 3YA) will have one of the best programmes of the week. The artists engaged for the evening include Miss Anita Graham (mezzo-soprano), Miss Olga Wacked (contralto), Mr. W. J. Trewern (tenor), Mr. W. J. Spratt (bass), and Mr. Allan Brown (humour). Mr. Spratt is a very well known oratorio and concert platform singer. Mr. Brown is one of the best comedians in Christchurch. He made a great hit in the recent production of "The Arcadians."

**"TO-NIGHT'S the Night,"** and a boxing match are the main features of Wednesday evening's programme. The vocal portion will be handled by the Radiolian Quartet, who can be relied upon to give one of their usual excellent interpretations of Rubens' play. The participants in the boxing contest will be the redoubtable Johnnie Leckie and Norman Radford. This latter broadcast will commence at 9 o'clock.

**T**HE first half-hour of Thursday evening's concert will be occupied by Lane Wilson's "Flora's Holiday," a song cycle of charming old English melodies. Some of the songs on the supplementary programme include Chaminade's "L'Ete," to be sung by Madame Gower Burns, "Mandalay" by Mr. Clive Hindle, "Winkin', Blinkin'," by Mrs. Ann Harper, and "Where'er You Walk" by Mrs. Harold Prescott. Miss Dorothy Jenkin will be reciting that evening, one of her items being "A New Lease of Life."

**A** PROGRAMME of popular items, concluding with a dance music session, is scheduled for Friday evening. The vocalists will be the Dulcet Quartet. Solos as well as concerted numbers will be sung. Miss Hilda Hutt has two charming numbers by Novello and Sanderson. Miss Nellie Lowe will sing "Lad o' Mine," "Red Rose of England," and "Gretna Green" (all by G. Oliver). Mr. T. G. Rogers will sing Adams's "Roses" and "Good Company." Mr. A. G. Thompson will sing the spritely "From Rushy Beds of Silver Nile" and "Harlequin." The Williams Dance Band will supply the latest in dance music.

Saturday, being the eve of Armistice Day, and an excellent wartime concert having been arranged at 2YA, the whole programme will be rebroadcast by 3YA.

### 4YA Features

**T**HE broadcast of the service from St. Paul's Anglican Cathedral will be followed, if fine weather prevails, by a band concert, relayed from St. Kilda.

**O**N Tuesday evening the Rev. W. B. Scott will continue his series of talks on early New Zealand, by addressing listeners on "Edward Gibbon Wakefield and the New Zealand Company."

**T**UESDAY'S programme will contain some particularly fine numbers by the St. Kilda Band. A selection of Wilfred Sanderson's songs, arranged by Ord Hume, will be an outstanding item. The trombone fantasia, "Firefly," will be another item worth watching for. Miss Wyn McPeak (contralto), Mr. L. E. Dalley (tenor), and Mr. E. G. Bond (bass) will provide vocal numbers. Mr. Lester Moller will recite Stephen Leacock's "Under the Barber's Knife" and "The Loss of the Birkenhead," by Conan Doyle.

**A** POPULAR light programme will follow the relay of orchestral music from the Octagon Theatre on Wednesday evening. Miss Betty Roberts (light mezzo-soprano) will sing numbers from "Sunny" and "That Saxophone Waltz." Miss Thelma Blackman (light soprano), will sing "Just Around the Corner" and "I'm Thinking of Someone." Mr. Chris Harlie (comedian) will entertain with child impersonations and some comic songs. The Scottish comedian, Mr. James Paterson, will present some humorous songs by Lauder and Will Fyffe. Humorous sketches will be presented by Miss Sheila Neilson and Mr. J. B. McConnell. The Dunedin Banjo Trio will feature popular song hits, old and New.

**M**ISS MOLLY VICKERS (mezzo-soprano) will, among other numbers, sing "Ye Banks and Braes" on Friday evening. Some baritone solos from modern composers will be rendered by Mr. L. M. Cachemaile and Miss Madge Yates will recite John Drinkwater's "Morning Thanksgiving." Cornet solos will be contributed by Mr. George Christie.

**L**IZA LEHMANN'S "The Daisy Chain" will be sung by the 4YA Harmonists on Saturday evening. This delightful song cycle comprises a number of quartets and solos, songs of childhood and their melodies are of the sweetest that could be imagined. Supporting the 4YA Harmonists will be Mr. J. W. Stewart (flautist) and Mr. A. R. Watson (violinist). Mr. Roberta Williams will recite several popular elocutionary numbers. At intervals during the evening, orchestral music under the direction of Mr. L. D. Austen, will be relayed from the Strand Theatre.

**T**HE attention of the Academy of Science is being given to an invention by M. Pasteur, which, it is claimed by the inventor, will convert the sun's rays for the necessary power for a receiver set. A special thermo electric apparatus transforms the heat of the sun into an electric current.

### In the Land of Make-Believe

#### Unusual Devices Used to Effect Realism

**I**T quite often happens that the children during their hour are transported to some distant place in an aeroplane, motor, sailing boat or train. Those who follow the course in these conveyances are often convinced of the realism of the noises concomitant with these. A battle often appears real by the introduction of what seems to be machine-gun fire and heavy artillery, while the puffing of a train up a steep hill convinces the youthful listeners they are really participating in a trip. Not long ago one station desired to reproduce the sound made by a motor-boat, and it took a deal of thinking and experimenting before the right sound was hit upon. In the end it was simply gained by tapping the fingers of one hand smartly against the palm of the other.

**A**N Australian writer goes into detail regarding the various noises as follow: In some instances the actual instrument used in the adventure sounds the most realistic on the stage, as in the case of a dog whistle or the clicking of a typewriter or a camera. On the other hand, cannon and gun effects can best be produced by the expert dropping of marbles on bass drums and the rattle of machine guns by playing dried beans on kettle drums. War effects can be heightened by the simultaneous explosion of numerous harmless crackers.

Many experiments were made in American stations to reproduce the bell effects accompanying the running of a train, and it was eventually found necessary to get an actual train bell into the studio. Similarly, in

the reproduction of the noise of an aeroplane engine no substitute could be found, and an actual engine had to be operated in a room adjoining the studio.

**T**HE flapping of canvas sails in the wind is exceedingly hard to imitate over the air, as the flapping does not reproduce through the microphone at all. The best imitation was found by the producers of studio sketches in 2YC to be by playing an electric fan on a piece of tissue paper. The noise of a motor-car engine can easily be imitated from the studio by the holding of stiff sheets of brown paper against the wings of an electric fan.

Strange as it may seem, a revolver fired near a microphone does not sound at all like a revolver shot through the loudspeaker, so that noise has to be artificially produced, again by the useful electric fan and paper.

In American stations it has been found that the best loudspeaker imitation of a forest fire is produced by the noise of a plumber's blow lamp near the microphone, whilst the breaking of matches between the fingers by a number of studio attendants represents the falling of trees caused by the fire.

**T**HEREFORE, noises are not exactly what they seem through the loudspeaker, but the great thing for the producer of radio sketches, as in the stage representation of plays, is to assist the imagination of listeners so that they can mentally picture the scene that is being vocally described to them over the air.

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# Full Programmes for Next

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## Sunday, November 4

### 1YA AUCKLAND (333 METRES)—SUNDAY, NOVEMBER 4.

- 8 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 session conducted by Uncle Len.  
 6.55: Relay of service from Church of the Holy Sepulchre—Preacher: Rev. G. Gordon Bell; Organist: Mr. Trevor Sparling.  
 8.30: Gramophone lecture-recital.  
 9.30: God Save the King.

### 2YA WELLINGTON (420 METRES)—SUNDAY, NOVEMBER 4.

- 3 p.m.: Chimes of the G.P.O. clock.  
 3.1: Relay of Sunday School Anniversary service from the Church of Christ, Vivian Street.  
 6.0: Children's Sunday service conducted by Uncle Ernest.  
 7.0: Relay of evening service of St. Gerard's Redemptorist Church.  
 8.15 (approx.): Studio concert.  
 Overture—Berlin State Opera Orchestra, "Don Giovanni" (Mozart) (H.M.V. Record E463).  
 Soprano solos—Miss Florence Stevens, (a) "Let Me Wander Not Unseen" (Handel); (b) "A Carol of Bells" (Stanford).  
 Piano solo—Miss Thelma Willoughby, "Ballade in F" (Chopin).  
 Baritone solo—Mr. S. E. Rodger, "O God, Have Mercy" (from "St. Paul") (Mendelssohn).  
 Orchestral—New Queen's Hall Light Orchestra,—"Peer Gynt Suite" No 2 (Grieg). 1. Der Brautraut. 2. Arabian Dance. 3. Return of Peer Gynt. 4. Solveig's Song. (Columbia Records O2631/2).  
 Tenor solo—Tudor Davies, "Ah! Moon of My Delight" (from "In a Persian Garden") (Lehmann) (H.M.V. Record D1283).  
 Operatic selection—Band of H.M. Goldstream Guards, "Martha" (Flotow) (H.M.V. Record C1453).  
 Soprano solo—Miss Florence Stevens, "Angels Ever Bright and Fair" (Handel).  
 Orchestral—Salon Orchestra, "Serenade" (Toselli) (H.M.V. Record EA358).  
 Baritone solo—Mr. S. E. Rodger, "My Dreams" (Tosti).  
 Organ solo—Edwin H. Lemare, "Traumerei" (Schumann), (H.M.V. Record C1455).  
 Tenor solo—Tudor Davies, "On Wings of Song" (Mendelssohn).  
 Light orchestral—Columbia Symphony Orchestra, "Morning, Noon and Night" (Suppe) (Columbia Record O2617).  
 Close down.

### 3YA CHRISTCHURCH (306 METRES)—SUNDAY, NOVEMBER 4.

- 3 p.m.: Gramophone recital (electrically reproduced).  
 4.30: Close down.  
 5.30: Children's song service conducted by Uncle David.  
 6.30: Relay of evening service from the Church of Christ, Moorhouse Avenue.  
 Preacher: Pastor J. Crawford; Organist: Miss E. Hepburn;  
 Choirmaster: Mr. H. Ames.  
 7.45: Studio recital.  
 9.30: Close down.

### 4YA DUNEDIN (463 METRES)—SUNDAY, NOVEMBER 4.

- 5.30 p.m.: Children's song service conducted by Big Brother Bill.  
 6.15: Organ music by Mr. E. Heywood, F.R.C.O.  
 6.30: Relay of service from St. Paul's Cathedral—Preacher: Rev. Canon Nevill.  
 8.0: Relay from St. Kilda Band Rotunda (weather conditions permitting) of concert by the St. Kilda Band under the direction of Mr. J. Dixon.  
 9.15: Close down.

## Monday, November 5

### 1YA, AUCKLAND (333 METRES)—MONDAY, NOVEMBER 5.

SILENT DAY.

### 2YA, WELLINGTON (420 METRES)—MONDAY, NOVEMBER 5.

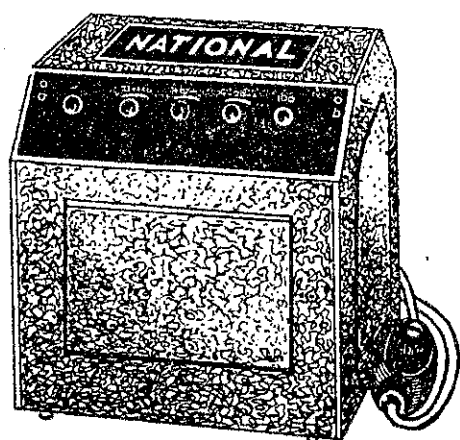
- 3 p.m.: Chimes of the G.P.O. Clock.  
 3.1: Selected gramophone items.  
 4.30 and 4.55: Sports results to hand.  
 5.0: Close down.  
 6.0: Children's session conducted by Uncle Jeff and Aunt Gwen.  
 7.0: News session, market reports, and sports results.  
 7.40: Lecturette—Mr. H. C. South, "Books Grave and Bay."  
 8.0: Chimes of the G.P.O. Clock.  
 8.1: Overture—Orchestra, "The Magic Flute" (Mozart).  
 8.11: Soprano solos—Miss Monica Malfroy, (a) "Romance de Pauline" (from "La Dame de Pique" (Tchaikowsky); (b) "An Indian Lullaby" (Orlando Morgan).  
 8.17: Symphony—Orchestra, "Symphony in G Minor" (Mozart).  
 8.29: Baritone solos—Mr. John Prouse, (a) "The Last Man" (Calcott); (b) "I Attempt From Love's Sickness" (Purcell); (c) "Blow High, Blow Low" (Dibdin); (d) "Hearts of Oak" (Boyce).  
 8.41: Recital—Mrs. Kathleen Shaw, "Ojistoh" (Anon).  
 8.48: Contralto solos—Miss Evelyn Robinson, (a) "O Thank Me Not" (Mallinson); (b) "Peace" (Hawley).  
 8.53: Tenor solo—Mr. Eric Rishworth, "To a Water Lily" (Grieg).  
 8.57: Violin solo with orchestral accompaniment—Miss Ava Symons, "Sieg-mund's Liebeslied" (Wagner).  
 Dance—Orchestra, "Danse des Persanes" (Moussorgsky).  
 9.6: Weather forecast.  
 9.7: Soprano solos—Miss Monica Malfroy, (a) "The Old Clock" (Drummond); (b) "You've Got Your Mother's Eyes" (Drummond).  
 9.14: Instrumental—Orchestra, Repeat number.  
 9.21: Contralto solos—Miss Evelyn Robinson, (a) "Four by the Clock" (Mallinson); (b) "Eventide" (Mallinson).  
 9.27: Pianoforte solos—Miss Alice Duff, (a) "Etude" No. 6 Op. 25 (Chopin); (b) "Drinking Song" (from "Chant Polonais") (Chopin).  
 9.35: Recital—Mrs. Kathleen Shaw, "The Lesson of the Water Mill" (Doudney).  
 9.40: Tenor solo—Mr. Eric Rishworth, "To a Violet" (Brahms).  
 9.44: Duet with chorus and orchestra, (a) "Deep in My Heart, Dear"; (b) "Memories" (from "The Student Prince") (Romberg) (Columbia Record 02511).  
 9.52: Selection—Orchestra, "Chu Chin Chow" (Norton).  
 10.3: God Save the king.

### 3YA, CHRISTCHURCH (306 METRES)—MONDAY, NOVEMBER 5.

- 11.30 a.m.: Race results of the Canterbury Jockey Club's meeting at Riccarton, interspersed with selections from the studio.  
 6 p.m.: Children's session conducted by Scatterjoy.  
 7.15: News session.  
 7.30: Talk—Mr. A. W. Page, M.A., "Esperanto."  
 8.0: Chimes. Band programme, featuring Christchurch Municipal Band (Conductor, Mr. A. J. Schnack).

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# Week-all Stations-to Nov. 11

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- 8.1: March—Band, "MYAKA" (Hitchen).  
 8.6: Tenor solos, followed by mezzo-soprano solo—Mr. A. A. Thompson and Miss Nellie Billeliff, (a) "Queen of the Earth" (Pinsuti); (b) "The Carnival" (Molloy); (c) "Salaam" (Lamb).  
 8.14: Orchestra—Light Opera Orchestra, "The Gondoliers" Overture (Sullivan).  
 Concerted with orchestra—Light Opera Co., "List and Learn" (from "The Gondoliers") (Sullivan) (H.M.V. Record D1334).  
 8.22: Soprano solo and recital to piano accompaniment—Miss Kathleen Chapple, (a) "Sing, Sweet Bird" (Ganz); (b) "That Cat" (Arpphort).  
 8.30: Selection—Band, "Patience" (Sullivan).  
 8.40: Songs at the piano—Mr. Chas. Lawrence, Bright Songs to His Own Accompaniment (MS).  
 8.48: Hymn—Band, "Fierce Raged the Tempest" (Dykes).  
 8.56: Baritone solo—Mr. Sydney Armstrong, "Mate o' Mine" (Ivey).  
 9.0: Weather forecast.  
 9.2: Tenor solo, followed by Mezzo-soprano solos—Mr. A. R. Thompson and Miss Nellie Billeliff, (a) "The Kerry Dance" (Molloy); (b) "Borth of Morn"; (c) "Leaves and the Wind" (Leoni).  
 9.11: Humour—Jno. Henry and Blossom, "The Stocking" (Henry and Reeve) (H.M.V. Record B2393).  
 9.17: Selection—Band, "All Trumps" (Neat).  
 9.29: Baritone solos—Mr. Sydney Armstrong, (a) "Youth" (Allitsen); (b) "Heart of Gold" (Manney).  
 9.34: Hawaiian—Hilo Hawaiian Orchestra, (a) "Hawaiian Nights" (Roberts); (b) "Aloma" (Bowers) (H.M.V. Record EA310).  
 9.40: Songs at the piano—Mr. Charles Lawrence, More Songs and Bright Moments.  
 9.47: Concerted with orchestra—D'Oyley Carte Opera Co., (a) "Good Morrow, Pretty Maids"; (b) "For the Merriest Fellows are we"; (c) "See! See! At Last They Come" (from "The Gondoliers") (Sullivan) (H.M.V. Record D1335).  
 9.55: Dance number—Band, "Lady Bird" (Robinson).  
 March—Band, "Conqueror" (Moorhouse).  
 God Save the King.

## 4YA, DUNEDIN (463 METRES)—MONDAY, NOVEMBER 5.

SILENT DAY.

## Tuesday, November 6

### 1YA, AUCKLAND (333 METRES)—TUESDAY, NOVEMBER 6.

- 3 p.m.: Afternoon session—Selected studio items.  
 4.0: Literary selection by the Announcer.  
 4.8: Selected studio items.  
 4.25: Sports results to hand.  
 4.30: Close down.  
 6.0: Children's session, conducted by Uncle George.  
 7.15: News and market reports. Book review.  
 8.0: Chimes.  
 Overture—Orchestra, "Jolly Robbers" (Suppe).  
 8.11: Soprano solo—Miss Violet Harrison, "My Task" (Squire).  
 8.15: Grand organ solo—Marcel Dupre, "Prelude and Fugue in G Major" (Bach), (H.M.V. record D1402).  
 8.23: Baritone solo—Mr. L. Gibson-Mackie, "Maire, My Girl" (Aitken).  
 8.27: Suite—Orchestra, "By the Blue Hawaiian Waters" (Ketelbey).  
 (1) Hula Dance; (2) The "Kanaka" lover appears; (3) Song of the Hula Girl; (4) Dance of the Betrothal Ceremony.  
 8.33: Contralto solo—Madame Irene Ainsley, "Nobil Senori" ("Les Huguenots"), (Meyerbeer).  
 8.38: Baritone solo—Mr. L. Gibson-Blackie, "Pale Moon" (Logan).  
 8.42: Lecture—Mr. A. B. Chappell, M.A., "The Maori—His Place in the Human Family."  
 8.58: Relay of vocal interlude from the Majestic Theatre Orchestra, under the direction of Mr. J. Whiteford Waugh.  
 9.6: Weather forecast.  
 9.8: Orchestral novelty—Orchestra, "Bells of St. Mary's" (Adams).  
 9.14: Soprano solo—Miss Marjorie Fair, "The Carnival" (Molloy).  
 9.18: Pianoforte solo—Wm. Backhaus, "Hungarian Rhapsody, No. 2" (Liszt), (H.M.V. record DB1013).  
 9.26: Presentation of excerpts from the opera, "Orpheus" (Gluck), produced under the direction of Madame Irene Ainsley.

Cast.

Orpheus ..... Madame Irene Ainsley  
 Euridice ..... Miss Violet Harrison  
 Amor ..... Miss Marjorie Fair

- "I Mourn My Loved One"—Contralto (recitative and aria).  
 "Go, and With Thy Lyre"—Soprano.  
 "Weeping Sorely, I Stray"—Contralto.  
 "The Gods, If They Call Thee"—Soprano.  
 "Away With Mourning"—Soprano.  
 "Oh, Be Merciful"—Soprano and chorus.  
 "In This Realm"—Chorus.  
 "On These Meadows"—Soprano and chorus.  
 "How Pure Alike"—Contralto.  
 "From the Realm of Souls Departed"—Chorus.  
 "Come, On My Trueness Relying"—Soprano and contralto duet.  
 9.42: Bass with orchestra—Marcel Journet, (a) "Vecchia Zimmarra" (Farewell, Old Coat), (from "La Boheme"), (Puccini); (b) "Chi Mi Dira Di Il Bicchier" (Know Ye, Dear Friends), (from "Marta"), (Flotow), (H.M.V. record DA771).  
 9.50: Musical comedy selection—Orchestra, "Sunny" (Kern).  
 10.0: Close down.

### 2YA, WELLINGTON (420 METRES)—TUESDAY, NOVEMBER 6.

- 3 p.m.: Chimes of the G.P.O. Clock.  
 3.1: Selected gramophone items.  
 4.30 and 4.55: Sports results.  
 5.0: Close down.  
 6.0: Children's session conducted by Big Brother Jack.  
 7.0: News session, market reports and sports results.  
 7.25: Lecturette—Mr. A. E. Wilson of the Tourist Department, "Tourist and Holiday Resorts."  
 7.40: Lecturette—"For the Man on the Land" (by a representative of the Agricultural Department).  
 8.0: Chimes of the G.P.O. Clock.  
 8.1: Overture—Orchestra, "Glory of Russia" (Kreen).  
 8.12: Soprano solo—Miss Myra Sawyer, "An Indian Squaw Song" (Morgan).  
 8.16: Waltz—Eddie Thomas's Collegians, "Beautiful Ohio" (Columbia Record 02651).  
 8.20: Bass solo—Mr. Wm. Boardman, "Sea Road" (Haydn-Wood).  
 8.24: Xylophone solo with orchestral accompaniment, Mr. L. W. Probert, "Dance of the Toy Regiment" (Shilkret and Green).  
 8.29: Vocal duet—Miss Myra Sawyer and Mr. Wm. Boardman, "Still as the Night" (Goetz).  
 8.33: Entr'acte—Orchestra, "Minuet" (Paderewski).  
 8.37: Humour—Mr. Doug. Stark, (a) "I'm Going to Marry 'Arry" (Lauder); (b) "Bonnie Scotland" (Lauder).  
 8.47: Baritone solo—Fraser Gange, "Slumber on, My Little Gipsy Sweet-heart" (Herbert) (Columbia Record 02574).  
 8.51: Instrumental—Orchestra, repeat number.  
 8.59: Weather forecast.  
 9.0: Lecturette—Mr. McGowan, "A Voice from the Dark."  
 9.7: Novelty fox trot—Ben Selvin and his Orchestra, "Chili-Pom-Pom" (Columbia Record 01204).

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- 9.11: Soprano solo—Miss Myra Sawyer, "Vainka's Song" (Whishaw).  
 9.15: Novelty—Orchestra, "The Voice of the Bells" (Thurban).  
 (Synopsis: The sun is slowly rising behind the mountain tops. The monks of St. Bernard assemble for their morning prayer. "The Voice of the Bells" is heard far and near. A storm creeps up, then breaks with sudden fury. The monks in haste leave the monastery to succour the victims of the storm, which rapidly increases in intensity. "The Voice of the Bells" is heard in warning, "Try not the Pass." The wind howls and the snow eddies around the monks as they beat their way through the storm, battling with the elements. At last they reach the poor half-frozen wayfarer, "Excelsior." They lift the sufferer upon their shoulders, and prepare to carry him to a safe haven. The wind increases, and the storm becomes more terrific in its intensity. Alas! the monks fear that they and their burden are lost. They pause and pray for guidance. They listen—their prayer is answered. They hear again in the distance, "The Voice of the Bells," calling to home and safety).
- 9.21: Vocal duet—Miss Myra Sawyer and Mr. Wm. Boardman, "Nocturne" (Denza).  
 9.25: Band selection—Australian Commonwealth Band, "Slidin' Thro' the Rye" (Columbia Record 01235).  
 9.29: Humour—Mr. Doug. Stark, "A Dress Rehearsal" (original).  
 9.34: Bass solo—Mr. Wm. Boardman, "Bedouin Love Song" (Pinsuti).  
 9.38: Musical comedy selection—Orchestra, "The Dollar Princess" (Fall).  
 9.48: Tenor solo—Ernest McKinley, "Pokare Kare" (Columbia Record 01063).  
 9.52: Humour—Nicholas Adams, "Perlmutter, M.P." (the original Perlmutter of 'Potash and Perlmutter') (Columbia Record 9145).  
 10.0: Vocal with orchestra—Norah Blaney, "Sweet Suzanne" (Columbia Record 01170).  
 10.4: March—National Military Band, "National Emblem" (Columbia Record 01153).  
 10.8: God Save the King.

### 3YA, CHRISTCHURCH (306 METRES)—TUESDAY, NOVEMBER 6.

- 11.30 a.m.: Results of Metropolitan Trotting Club's Meeting at Addington, interspersed with items from studio.  
 4.30: Close down.  
 7.15: News session.  
 8.0: Chimes. Holiday programme.  
 8.1: Overture—rebroadcast of 2YA, Wellington—Orchestra, "The Glory of Russia" (Kreen).  
 8.12: Mezzo-soprano solo—Miss Anita Graham, "From the Ramparts of Seville" ("Carmen") (Bizet).  
 8.16: Concerted with orchestra—Light Opera Company, "Gems from The Blue Mazurka" (Lehar) H.M.V. Record EB11).  
 8.20: Bass solos—Mrs. W. J. Spratt, (a) "A King's Man" (Wolseley); (b) "The Wheel Tapper's Song" (Charles).  
 8.28: Marimba Orchestra—Rio Marimba Orchestra, "My Isle of Golden Dreams" (Medley Waltz), (Blaufuss) (Columbia Record 02685).  
 8.32: Contralto solo—Miss Olga Wacked, "The Enchantress" (Hatton).  
 8.36: Instrumental trios—Christchurch Broadcasting Trio, (a) "Barcarolle" (Hoffman); (b) "The Mill" (Raff).  
 8.44: Male choruses—"War Songs" and "Sea Songs" (H.M.V. Record EB25).  
 8.48: Humorous recital—Mr. Allan Brown, "A Sea Story by Mafferty" (Herbert).  
 8.53: Hawaiian selections—Hilo Hawaiian Orchestra, (a) "Hawaiian Sunset" (Waltz) (Vandersloot); (b) "Sweet Hawaiian Dream" (Coleman) (H.M.V. Record B2328).  
 9.0: Tenor solo—Mr. W. J. Trewern, "Prelude" (from "Cycle of Life") (Ronald).  
 9.4: Weather forecast.  
 9.6: Orchestral selections—National Symphony Orchestra, (a) "La Traviata" (Prelude) (Verdi); (b) "Sylvia Ballet—Cortege de Bacchus" (Delibes) (H.M.V. Record EB24).  
 9.14: Mezzo-soprano solos, Miss Anita Graham, (a) "I Know a Lovely Garden" (D'Hardelot); (b) "April is a Pedlar" (Newton).  
 9.20: Instrumental trios—Christchurch Broadcasting Trio, (a) "Cantabile" (Widor); (b) "Serenade" (Herbert).  
 9.28: Vocal solo and chorus with piano—"We're All Bound to Go" (from "The Shanty Book") (Terry) (Columbia Record 01024).  
 9.32: Tenor solos—Mr. W. J. Trewern, (a) "Come Love, Be Mine" (Leoncavallo); (b) "Audacity" (Eville).  
 9.36: Touches of humour—Mr. Allan Brown, "Getting Up—The Bath—Breakfast" (Graham).  
 9.41: Light orchestral—New Light Symphony Orchestra, "Just a Memory" (De Sylva, Brown and Henderson) (H.M.V. Record EB18).  
 9.45: Contralto solos—Miss Olga Wacked, (a) "A Little Love, a Little Kiss" (Silesu); (b) "Beneath Thy Window" (Di Capua).  
 9.51: Orchestral selection—Piccadilly Orchestra, "The Waltz Dream" (Strauss) (H.M.V. Record B 2684).  
 9.59: God Save the King.

### 4YA, DUNEDIN (463 METRES)—TUESDAY, NOVEMBER 6.

- 3 p.m.: Town Hall chimes.  
 3.1: Afternoon session—selected gramophone items.  
 4.25: Sports results.  
 4.30: Close down.  
 6.0: Town Hall chimes.  
 6.1: Children's session conducted by Big Brother Bill.  
 7.15: News session.

- 8.0: Town Hall chimes. Concert by St. Kilda Band under the conductorship of Mr. James Dixon, and items by assisting artists.  
 8.1: Waltz—Band, "Remembrance" (Joyce).  
 8.7: Bass solos—Mr. E. G. Bond, (a) "Though Faithless Men" (Halevy); (b) "I Will Not Grieve" (Schumann).  
 8.14: March—Band, "Roaring Lions" (Allen).  
 8.18: Recital—Mr. Lester Moller, "Under the Barber's Knife" (Leacock).  
 8.23: Chorus with orchestra—Columbia Light Opera Company, "Rio Rita" vocal gems (Tierney and McCarthy) (Columbia Record 02572).  
 8.27: Cornet solo with band accompaniment—"For You Alone" (Gheel).  
 8.32: Contralto solos—Miss Wyn McPeak, (a) "The Arrow and the Song" (Balfe); (b) "Lilac Tree" (Gartlan).  
 8.37: Organ solo—G. T. Pattman, "Andantino" (Song of the Soul) (Lemare) (Columbia Record 9135).  
 8.41: Selection—Band, "Sanderson's Songs" (Arrgd. Hume).  
 8.51: Tenor solo—Mr. L. E. Dalley, "Angels Guard Thee" (Godard).  
 8.55: Weather forecast.  
 8.57: Address by Rev. W. Bramwell Scott—"Early New Zealand—Edward Gibbon Wakefield and the New Zealand Company."  
 9.12: Japanese romance—Band, "Poppies" (Moret).  
 9.18: Bass solo—Mr. E. G. Bond, "Lowland Lee" (Branscombe).  
 9.22: Waltz with vocal chorus—Grand organ solo—G. T. Pattman, "Tired Hands" (Piantadosi) (Columbia Record 01145).  
 9.26: Trombone fantasia with band accompaniment, "The Firefly" (Moss).  
 9.33: Recitals—Mr. Lester Moller, (a) "The Loss of the Birkenhead" (Doyle); (b) "A Dissertation on Matrimony" (Hayes).  
 9.43: Baritone solo—Fraser Gange, "O Star of Eve" ("Tannhauser") (Wagner) (Columbia Record 02574).  
 9.47: Air with variations—Band, "Austrian Hymn" (Arr. Rimmer).  
 9.53: Contralto solo—Miss Wyn McPeak, "Morning" (Speaks).  
 9.56: Orchestral—Columbia Symphony Orchestra, "March of the Toys" (Herbert) (Columbia Record 02651).  
 10.0: Tenor solos—Mr. L. E. Dalley, (a) "Bird Songs at Eventide" (Coates); (b) "My Desire" (Cadman).  
 10.4: March—Band, "The Paragon" (Southwell).  
 10.7: God Save the King.

## Wednesday, November 7

### 1YA, AUCKLAND (333 METRES)—WEDNESDAY, NOVEMBER 7.

- 3 p.m.: Afternoon session—Selected studio items.  
 4.0: Literary selection by the Announcer.  
 4.8: Selected studio items.  
 4.25: Sports results to hand.  
 4.30: Close down.  
 6.0: Children's session, conducted by Uncle Tom.  
 7.15: News and market reports.  
 7.45: Talk—Mr. Norman Kerr, "Physical Culture."  
 8.0: Chimes.  
 8.1: Orchestral selection—Royal Albert Hall Orchestra, "Pomp and Circumstance" (in A Minor), (Elgar), (H.M.V. record D1102).  
 8.5: Vocal quartet—Minster Quartet, "Annie Laurie" (Old Scottish).  
 8.9: Soprano solo—Miss Gladys Hosking, "May Dew" (Bennett).  
 8.13: Cello solo—Pablo Casals, "O Star of Eve" (Wagner), (H.M.V. record DB1012).  
 8.17: Tenor solo—Mr. A. L. Macpherson, "Phyllis Has Such Charming Graces" (Wilson).  
 8.21: Humour and elocution—Mr. F. W. Barker, (a) "Her Shopping Idea" (Pain); (b) "Nature's Gentleman" (Anon.).  
 8.27: Contralto solo—Miss Maida Davison, "Nightfall at Sea" (Phillips).  
 8.31: Baritone solo—Mr. Roy Stevenson, "The Jester" (Lissenden).  
 8.35: Orchestral selection—Philadelphia Symphony Orchestra, "Toccato and Fugue in D Minor" (Bach), (H.M.V. record, D1428).  
 8.43: Soprano solos—Miss Gladys Hosking, (a) "The Piper of Love" (Carew); (b) "Little Bare Feet" (O'Hara).  
 8.50: Tenor solo—Mr. A. L. McPherson, "The Auld Scotch Sings" (Leeson).  
 8.54: Recital and humour—Mr. F. W. Barker, (a) "Ambition" (Service); (b) "At Thirty-five" (Service); (c) "My Beastly Eyeglass."  
 9.2: Weather forecast.  
 9.4: Contralto solo—Miss Maida Davison, "The House by the Side of the Road" (Gulesian).  
 9.8: Baritone solo—Mr. Roy Stevenson, "To the Forest" (Tschaikowsky).  
 9.12: Light orchestral selection—New Light Symphony Orchestra, "Just a Memory" (De Sylva, Brown, and Henderson), (H.M.V. record EB18).  
 9.16: Vocal quartet—Minster Quartet, "In England, Merrie England" (German).  
 9.20: Gramophone lecture-recital, by Mr. F. W. Strong.  
 10.0: Close down.

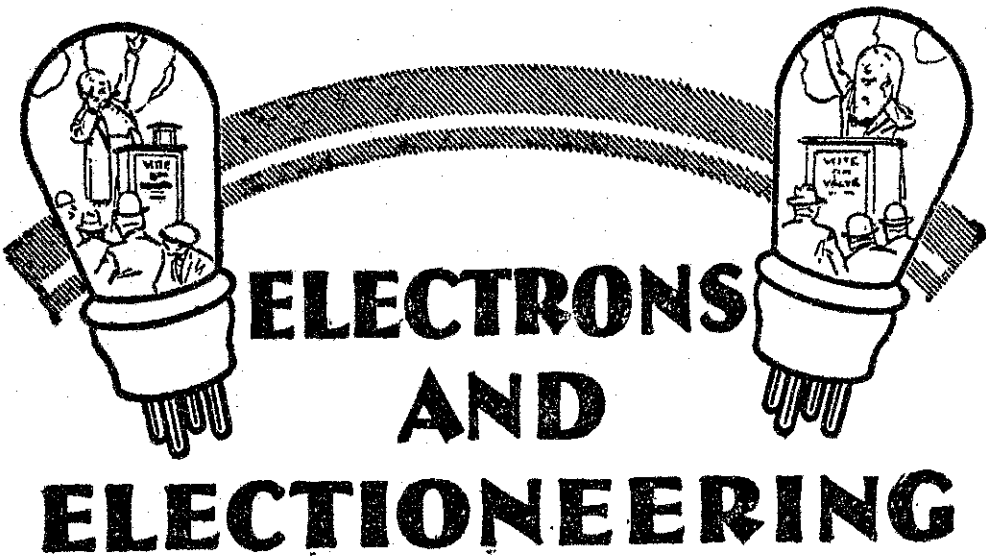
### 2YA, WELLINGTON (420 METRES)—WEDNESDAY, NOVEMBER 7.

SILENT DAY.

### 3YA, CHRISTCHURCH (306 METRES)—WEDNESDAY, NOVEMBER 7.

- 11.30 a.m.: Results of Canterbury Jockey Club's meeting at Riccarton and selected studio items.  
 4.30: Close down.





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- 6.0: Children's session conducted by Uncle Peter and Mother Hubbard.  
 7.15: Addington stock market reports.  
 8.0: Chimes. Vocal excerpts from the musical comedy, "To-night's the Night" (Rubens).  
 8.1: Overture—Band of H.M. Coldstream Guards, "Light Cavalry" (Suppe) (H.M.V. Record C1335).  
 8.5: Opening chorus, followed by tenor solo and chorus—Radiolian Quartet, Mr. Gregory Russell and chorus. (a) "Opening Chorus" (Rubens); (b) "When the Boys" (Rubens).  
 8.11: Orchestral—Victor Salon Orchestra, "Indian Love Call" (Friml) (from "Rose Marie") (H.M.V. Record EA186).  
 8.15: Soprano and bass duet and chorus—Radiolian Duo and chorus. (a) "Please Don't Flirt" (Rubens); (b) "The Mannequin Ball" (Rubens).  
 8.19: Wurlitzer organ solo—Reg. Foort, "Ballet Egyptienne" (Luigini) (H.M.V. Record 2477).  
 8.27: Bass solo—Mr. W. J. Richards, "The Only Way" (Rubens).  
 8.31: Orchestral—3YA Studio Orchestra, "To-night's the Night" (Rubens).  
 8.41: Humorous recital, followed by Hawaiian selection. (a) Mr. J. J. Flewellyn, "Fashions" (Monty); (b) Hawaiian Guitars, "Medley Waltz" (Allan-Hopkins) (H.M.V. Record EA24).  
 8.49: Contralto and tenor duet—Radiolian Duo and Mrs. Claris Shaw. (a) "Round the Corner" (Rubens); (b) "I'd Like to Bring" (Rubens).  
 8.54: Weather forecast.  
 8.56: Orchestral selections—3YA Orchestra. (a) "Intermezzo" (York Bowen); (b) "Tout Vienne" (Valse) (Strauss).  
 9.2: Relay of professional boxing contest—Johnnie Leckie v. Norman Radford—from Municipal Concert Hall. The following programme is subject to alteration depending on the duration of the contest.  
 Bass solo and chorus, followed by chorus—Mr. W. J. Richards and chorus, and the Radiolians. (a) "To-night's the Night" (Rubens); (b) "Dancing Mad" (Rubens).  
 Hawaiian selection—Honolulu Serenaders, "Honolulu Stomp" (Pilipo) (H.M.V. Record EE92).  
 Contralto solo and chorus, followed by tenor solo and chorus—Miss Mildred Russell and Radiolians, and Mr. Gregory Russell and Radiolians. (a) "Stars" (Rubens); (b) "Pink and White" (Rubens).  
 Orchestral selection, followed by Hawaiian selection. (a) Salon Orchestra, "Nola" (Arndt); (b) "Lou'Siana Lullaby" (Zoeller) (H.M.V. Records B2169 and EA374).  
 Bass solo and chorus—Mr. W. J. Richards and Radiolians, "I'm a Millionaire" (Rubens).  
 Orchestral selections—3YA Orchestra, (a) "Melodie Arabe" (soloist, Miss N. Ellwood) (Glazounoff); (b) "Hero's March" (Mendelssohn).  
 Recital—Mr. J. J. Flewellyn, "Health" (Monty).  
 Soprano solo, followed by finale—Mrs. Claris Shaw and Radiolians; (a) "Play Me that Tune" (Rubens); (b) "To-night's the Night" (Rubens).  
 God Save the King.

#### 4YA, DUNEDIN (463 METRES)—WEDNESDAY, NOVEMBER 7.

- 7 p.m.: Town Hall chimes.  
 7.1: Request gramophone concert.  
 7.46: News session and Burnside stock sale report.  
 8.0: Town Hall chimes.  
 8.1: Relay of orchestral music from the Octagon Theatre under the direction of Monsieur Henri de Rose (Mus.Bac.).  
 8.11: Humorous song with patter—Mr. Chris. Harlie, "I Get More Like a 'Pro' Every Day" (Bennett).  
 8.15: Saxophone solos—Mr. J. McCaw. (a) "That Haunting Rag" (Lenzberg); (b) "Whistle Away Your Blues" (Myers).  
 8.21: Popular song hits—Miss Thelma Blackman. (a) "I'm Thinking of Someone" (Moore); (b) "Come Down the Wanganui" (Lawrence).  
 8.28: Mixed voices with piano—the Revellers, "Gems from Tip-Toes" (Gershwin) (H.M.V. Record C1293).  
 8.32: Relay of orchestral music from Octagon Theatre.  
 8.42: Humorous Scottish song—Mr. J. Paterson, "The Egg" (A mournful melody) (Newman).  
 8.45: Humorous sketch—Miss Shiela Neilson and Mr. J. B. McConnell.  
 8.51: Hawaiian selection—Hawaiian guitar, banjo and ukulele trio, "My Hawaii" (Lewis) (Columbia Record 3606).  
 8.55: Popular songs—Miss Betty Roberts. (a) "Two Little Bluebirds" (Kern); (b) "Who" (Kern).  
 9.1: Weather forecast.  
 9.3: Popular numbers—Dunedin Banjo Trio, (a) "When I Was One Year Old" (Courtney); (b) "Mary" (Donaldson).  
 9.8: Comedian, with orchestra—Frank Crumit, "The Song of the Prune" (Crumit, De Costa) (Columbia Record EA366).  
 9.12: Popular numbers—Dunedin Banjo Trio, (a) "Diane" (Pollock); (b) "Meet Me To-day" (Dean).  
 9.17: Humorous patter—Mr. Chris. Harlie, "Child Impersonations".  
 9.22: Saxophone solo—Mr. J. McCaw, "Souvenir" (Drda).  
 9.26: Popular song—Miss Thelma Blackman, "Just Around the Corner" (Von Tilzer).  
 9.30: Military Tattoo—Band of H.M. Grenadier Guards, "Wembley Military Tattoo" (Columbia Record 9073).  
 9.38: Humorous sketch—Miss Shiela Neilson and Mr. J. B. McConnell.

- 9.46: Humorous Scottish songs—Mr. J. Paterson, (a) "When I Meet Mackay" (Lauder); (b) "I've Found the Tobermory Treasure" (Fyffe).  
 9.52: Popular numbers—Dunedin Banjo Trio, (a) "June Night" (Baer); (b) "Amazon" (Eltings); (c) "Moonlight on the Ganges" (Myers).  
 10.0: Popular song—Miss Betty Roberts, "That Saxophone Waltz" (Fisk).  
 10.4: Musical Odyli—Band of H.M. Grenadier Guards, "The Smithy in the Woods" (Michaelis) (Columbia Record 4111).  
 10.8: Close down.

## Thursday, November 8

### 1YA, AUCKLAND (333 METRES), THURSDAY, NOVEMBER 8.

- 3 p.m.: Afternoon session—Selected studio items.  
 4.0: Literary selection by the Announcer.  
 4.8: Selected studio items.  
 4.25: Sports results to hand.  
 4.30: Close down.  
 6.0: Children's session, conducted by Peter Pan.  
 7.15: Talk—Mr. L. Griffiths, F.H.R.S., "Gardening Tit-Bits."  
 7.30: News and market reports.  
 8.0: Chimes.  
 8.1: Overture—Orchestra, National Symphony Orchestra, "Light Cavalry" (Suppe), (Zonophone record EE102).  
 8.9: Quartet—Lyric Quartet, "Rockin' in de Wind" (Anon.).  
 8.13: Monologue—Mr. L. Griffiths, "Chance" (MS.).  
 8.18: Tenor solo—Mr. Arthur Ripley, "Who Knows?" (Ball).  
 8.22: Instrumental trio—Auckland Trio, "Scherzo" from "Trio in B Flat" (Dvorak).  
 8.30: Humour—Mr. Allan McElwain, some humour.  
 8.35: Hawaiian selection—"Medley Waltz" (Allan Hopkins). (H.M.V. record EA24).  
 8.39: Quartet—Lyric Quartet, "A Night of Love" (Spier).  
 8.44: Xylophone solo—Mr. A. S. McLachlan, "War March of the Priests" (Mendelssohn).  
 8.48: Vocal and instrumental—Bohemian Duo, (a) "Maori Melodies" (MS.); (b) selected.  
 8.54: Bass solo—Mr. Ernest Thomas, "Drake Goes West" (Sanderson).  
 8.58: Weather forecast.  
 9.0: Waltz—Dance orchestra, "Cielto Lindo" (Beautiful Heaven), (H.M.V. record EA349).  
 9.4: Recital—Mr. L. Griffiths, "Greetings".  
 9.9: Violin solo—Miss Ina Bosworth, "Ave Maria" (Schubert-Wilhelmj).  
 9.13: Tenor solos—Mr. Herbert Richards, (a) "Lady Mine" (Lohr); (b) "So Fair a Flower" (Lohr).  
 9.18: Wurlitzer organ solo—"Valse Fleur" (from "Nutcracker Suite"), (Tchaikowsky), (H.M.V. record C1386).  
 9.22: Vocal and instrumental—Bohemian Duo, (a) "Ramona" (Wayne); (b) "Hawaiian Melodies" (MS.).  
 9.30: Orchestral selection—Light Opera Orchestra, "The Gondoliers" Overture (Sullivan). (H.M.V. record D1334).  
 Concerted with orchestra, "List and Learn" (from "The Gondoliers" (Sullivan), (H.M.V. record D1334).  
 9.38: Humour—Mr. Allan McElwain, more humour.  
 9.43: Instrumental trio—Auckland Trio, "Naila Valse" (Delibes).  
 9.50: Xylophone solos—Mr. A. S. McLachlan, (a) "Gloaming" (Roat); (b) "Our Director" (Bigelow).  
 9.58: Quartet—Lyric Quartet, "Mother Goose Medley" (Russell).  
 10.2: God Save the King.

### 2YA, WELLINGTON (420 METRES)—THURSDAY, NOVEMBER 8.

- 3.0 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 Aunt Gwen.  
 7.0: News session, market reports and sports results.  
 7.40: Lecturette—Mr. A. J. Nicholls (representative of Hutt Valley Horticultural Society)—"Gardening."  
 8.0: Chimes of the G.P.O. clock. Concert by Wellington Municipal Tramways' Band, under the conductorship of Mr. T. Goodall, and assisting artists.  
 8.1: March—Band, "Ravenswood" (Rimmer). Overture—Band, "Ruy Blas" (Mendelssohn).  
 8.12: Concerted with Orchestra—Light Opera Coy., "Vagabond King" (Friml) (H.M.V. Record C1346).  
 8.16: An episode—The Tender Fellow, (a) "Together" (De Sylva, Brown and Henderson), (b) "Mary Ann" (Silver).  
 8.22: Minuet—Band, "Minuet from London Symphony" (Haydn). Selection—Band, "The Beauty of Bath" (Haines).  
 8.32: Baritone solo—The Baritone Fellow, "That Old Bush Shanty of Mine" (O'Hagan).  
 8.36: Hawaiian selection—South Sea Islanders, "Hilo Bay" (Clarke). (Columbia Record 01162).  
 8.40: Harmony—All the Fellows, "My Blue Ridge Mountain Home" (Robinson).  
 8.44: Recital—Miss Maude Farrant, "Swandalaya" (Townsend).  
 8.49: Song—The Bass Fellow, "The Song of the Clock" (Burchell).  
 8.53: Symphonic Poem—Band, "Coriolanus" (Jenkins).



- 9.3: Weather forecast.  
 9.4: Hawaiian selection—South Sea Islanders, "Lei Lani" (Heagney) (Columbia Record 01162).  
 9.8: Duet—The Two Lucky Fellows, "Meet Me at Twilight" (Harris).  
 9.12: Waltz—Band, "Tesoro Mio" (Becuni).  
 9.18: Monologue and chorus—The New Fellow, "Thinking" (Olman and Morgan).  
 9.22: Pipe organ solo—"Are You Happy?" (Ager and Yellen), (Columbia Record 01184).  
 9.26: Tenor solo—The Tenor Fellow, "Ramona" (Wayne).  
 9.30: By 'phone—The Old Fellow, "More Cohen" (Hayman).  
 9.35: Fox-trot—Ben Selvin's Orchestra, "In My Bouquet of Memories" (Akst) (Columbia Record 01137).  
 9.39: Quartet—Mellow Fellows, "Since You Whispered, I Love You" (Coslow and Mills).  
 9.43: Humour—Miss Maude Farrant, "Kisses" (Longstaffe).  
 9.48: Concerted with Orchestra, "Light Opera Coy., Gems from "Lady Luck" (Hedley), (H.M.V. Record C1346).  
 9.52: Morceau—Band, "Rustic Revels" (Ham).  
 March—Band, "Vale of Avon" (Vernon).  
 10.2: God Save the King.

### 3YA CHRISTCHURCH (306 METRES)—THURSDAY, NOVEMBER 8.

- 11.30 a.m. Results of Metropolitan Trotting Club's meeting at Addington, interspersed with items from the studio.  
 4.30: Close down.  
 6.0: Children's session conducted by Chuckle and Aunt Pat.  
 7.15: News session.  
 8.0: Chimes—re-broadcast of 2YA, Wellington (conditions permitting).  
 8.6: Classical programme, featuring "Flora's Holiday," a song cycle of old English melodies by Lane Wilson (with orchestral accompaniment by the Christchurch Broadcasting Trio).  
 Vocal quartet—Grand Opera Quartet, "Come All Ye Lads And Lassies" (Lane Wilson).  
 Soprano solo, followed by tenor solo—Madame Gower-Burns and Mr. Harold Prescott, (a) "Love's Greeting" (Lane Wilson), (b) "Tell Me, Charming Creature" (Lane Wilson).  
 Vocal quartets—Grand Opera Quartet, (a) "Gentle Dawn"; (b) "The Country Dance" (Lane Wilson).  
 Contralto solo—Mrs. Ann Harper, "Maidens, Beware Ye" (Lane Wilson).  
 Baritone solo—Mr. Clive Hindle, "Sound Argument" (Lane Wilson).  
 Quartets—Grand Opera Quartet, (a) "The Pedlar" (Lane Wilson); (b) "The Commotion of Love" (Lane Wilson).  
 8.30: Orchestral—New Light Symphony Orchestra, "Rustic Wedding Symphony" (Goldmark) (H.M.V. Record C1210).  
 8.34: Soprano solo—Madame Gower-Burns, "L'ete" (Chaminade).  
 8.38: Grand organ and concert solo—R. Arnold Greir, "Softly Awakes My Heart" ("Samson and Delilah") (Saint-Saens), (Zonophone Record A309).  
 8.42: Baritone solo—Mr. Clive Hindle, "Mandalay" (Squire).  
 8.46: Recitals—Miss Dorothy Jenkin, (a) "Taking His Temperature" (MS), (b) "The Culpit" (MS).  
 8.52: Weather forecast.  
 8.54: Military Band selection—Band of H.M. Coldstream Guards, "Iolanthe" (Sullivan) (H.M.V. Record C1368).  
 8.58: Contralto solo—Mrs. Ann Harper, "Winkin', Blinkin'" (Needham).  
 9.2: Tenor solo—Mr. Harold Prescott, "Where'er You Walk" (Handel).  
 9.6: Duet with chorus and orchestra, followed by tenor with chorus and orchestra, (a) "Deep in My Heart, Dear," (b) "Memories" (from "The Student Prince") (Romberg), (Columbia Record 02511).  
 9.14: Instrumental trios—Christchurch Broadcasting Trio, (a) "Intermezzo" (Bridge), (b) "Rondo" (Pleyel).  
 9.22: Contralto and tenor duet—Grand Opera Duo, "Tell Her I Love Her So" (De Faye).  
 9.26: Orchestral—New Light Symphony Orchestra, "Malaguena" (A Spanish Dance) (Moszkowski) (H.M.V. Record C1210).  
 9.30: Recital—Miss Dorothy Jenkin, "A New Lease of Life" (MS).  
 9.36: Vocal duet (soprano and baritone)—Grand Opera Duo, "Sunbeams" (Ronald).  
 9.40: Intermezzo—New Light Symphony Orchestra, "Cavalleria Rusticana" (Mascagni) (H.M.V. Record B2377); tone picture—Royal Opera Orchestra, "The Sleeping Beauty" (Tchaikowsky) (H.M.V. Record C1469).  
 9.48: God Save the King.

### 4YA, DUNEDIN (463 METRES)—THURSDAY, NOVEMBER 8.

SILENT DAY.

## Friday, November 9

### 1YA, AUCKLAND (333 METRES)—FRIDAY, NOVEMBER 9.

- 3 p.m.: Afternoon session—Selected studio items.  
 4.0: Literary selection by the Announcer.  
 4.8: Selected studio items.  
 4.25: Sports results to hand.  
 4.30: Close down.

- 6.0: Children's session, conducted by Nod.  
 7.15: News and market reports.  
 8.0: Chimes.  
 8.1: Overture—Orchestra, "The Rape in the Seraglio" (Mozart).  
 8.11: Quartet—Clarion Quartet, "Hearts of Oak" (Old English).  
 8.15: Tenor solo—Mr. James Simpson, "I Seek for Thee in Every Flower" (Ganz).  
 8.19: Pianoforte solo—Benno Moiselevitch, "Ballad No. 3, Op. 47, in A Flat" (Chopin), (H.M.V. record D1370).  
 8.27: Soprano solo—Miss Alma McGruer, "The Lass With the Delicate Air" (Arne).  
 8.31: Serenade—Orchestra, "Serenade" (Widor, arr. Bellingham).  
 8.37: Vocal duet—Miss B. Smith and Mr. J. Simpson, "The Second Minuet" (Beasley).  
 8.41: Wurlitzer organ solo—Reginald Foort, "Ballet Egyptien" (Luigini), (H.M.V. record B2477).  
 8.48: Humour—Mr. J. F. Montague, "Mrs. McSweeney Opens the Bottles."  
 8.54: Vocal quartet—Clarion Quartet, "Rocked in the Cradle of the Deep" (Parkes).  
 8.58: Ballet suite—Orchestra, "Coppelia Ballet" (Delibes); (1) Slavonic Theme with variations; (2) Festival Dance and Waltz of the Hours; (3) Nocturno; (4) Automaton Music and Waltz.  
 9.9: Bass solo—Mr. Duncan Black, "My Prayer" (Squire).  
 9.12: Weather forecast.  
 9.13: Grand organ and orchestra—Victor Symphony Orchestra, "Kamannoi-Ostrow" (Cloister Scene), (Rubinstein), (H.M.V. record EB10).  
 9.17: Contralto solo—Miss Beryl Smith, "The Bailiff's Daughter" (Anon.).  
 9.21: Chorus—The Revellers, "Gems" from "Tip-Toes" (Gershwin), (H.M.V. record C1293).  
 9.25: Humour—Mr. J. F. Montague, (a) "A Country Lover"; (b) "All Butt."  
 9.35: Vocal duet—Miss A. McGruer and Mr. D. Black, "Love Was Once a Little Boy" (Wade).  
 9.39: Tenor solo—Tito Schipa, "Ave Maria" (Schipa), (H.M.V. record DB 873).  
 9.43: Vocal quartet—Clarion Quartet, "Sea Medley" (arr. Clarions).  
 9.48: Musical comedy selection—Orchestra, "Lilac Time," Part 2 (Schubert-Clutsam).  
 10.0: God Save the King.

### 2YA, WELLINGTON (420 METRES)—FRIDAY, NOVEMBER 9.

- 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.  
 7.0: News session, market reports and sports results..  
 7.40: Lecturette—Mr. N. R. Jacobsen, "How We Learn."  
 8.0: Chimes of the G.P.O. Clock.  
 8.1: Overture—Orchestra, "La Vie Pour Le Tsar" (Glinka).  
 8.11: Soprano solo—Mrs. Ellison Porter, "Dancing Days" (Dickson).  
 8.15: Pianoforte solos—Miss Joyce Downing, (a) "Pastorale" (Scarlatti-Tan-sig); (b) "La Nuit" (Glazounow).  
 8.22: Contralto solo—Miss Madge Freeman, "The Glory of the Sea" (Sander-son).  
 8.26: Waltz—Orchestra, "The Merry Widow" (Lehar).  
 Intermezzo—Orchestra, "Gondaliera" Op. 41 (Moszkowski).  
 8.36: Vocal duet—Mrs. Ellison Porter and Mr. Edwin Dennis, "What Then, Santuzza?" (from "Cavalleria Rusticana") (Mascagni).  
 8.42: Humour—Mr. and Mrs. Albert Russell, (a) "Italiano" (Worton David); (b) "I'll Meet You Half Way".  
 8.49: Tenor solo—Mr. Edwin Dennis, "Au Pays" (Holmes).  
 8.53: Instrumental—Orchestra, repeat number.  
 9.1: Weather forecast.  
 9.2: Soprano solo—Mrs. Ellison Porter, "Vale" (Russell).  
 9.6: Suite—Orchestra, "Peer Gynt Suite" No. 2 (Grieg).  
 1. Abduction of the Bride.  
 2. Arabian Dance.  
 3. Peer Gynt's Homecoming.  
 4. Solveig's Song.

Synopsis:—Peer Gynt, the only son of poor peasants, is drawn by the poet as a character of morbidly developed fancy. In his youth he has many wild adventures—for instance, he stole the bride from a peasant's wedding and carried her up to the mountain peaks. Here he leaves her (No. 1—Ingrid's Lament)—to roam with wild cowherd girls. He then enters the kingdom of the mountain king, whose daughter falls in love with him, and dances to him. But he laughs at the dance and droll music, at which the enraged mountain folk try to kill him. He escapes and wanders in foreign lands, amongst others Morocco, where he appears as a prophet and is greeted by Arab girls (No. 2—Arabian Dance). After many hardships he returns as an old man, suffering shipwreck on the way (No. 3—Peer Gynt's Return)—to his home as poor as he left it. Here the sweetheart of his youth, Solveig, awaits him, faithful through all the years (No. 4—Solveig's Song).

- 9.20: Tenor solos—Mr. Edwin Dennis, (a) "Sing, Break into Song" (Mallinson); (b) "I Did Not Know" (Trottere).  
 9.27: Humour—Mr. and Mrs. Albert Russell, (a) "I Think of You" (Weston); (b) "Pretty Poll" (from "The Cingalee") (Monckton).  
 9.35: Contralto solo—Miss Madge Freeman, "Ships That Pass in The Night" (Stevenson).  
 9.39: Concerted musical comedy—"Oh! Kay" Medley (Gershwin), (Columbia Record 02572).

- 9.43: Vocal duet—Mrs. Ellison Porter and Miss Madge Freeman, "Sing Joyous Bird" (Phillips).  
 9.47: Selection—Orchestra, "Sunshine Girl" (Rubens).  
 9.57: God Save the King.

### 3YA, CHRISTCHURCH (306 METRES)—FRIDAY, NOVEMBER 9.

- 11.30 a.m.: Results of Metropolitan Trotting Club's Meeting at Addington, interspersed with items from the studio.  
 4.30: Close down.  
 6.0: Children's session conducted by Big Brother.  
 7.15: News session.  
 8.0: Chimes.  
 8.1: Re-broadcast of 2YA, Wellington (Overture, Orchestra, "La Vie Pour Le Tsar" (Glinka).  
 8.11: Baritone solos—Mr. A. G. Thompson, (a) "From Rushy Beds of Silver Nile" (Balfe); (b) "Harlequin" (Sanderson).  
 8.19: Violin solo—Miss Irene Morris, "Adagio and Allegro" from "Sonata in A" (Handel).  
 8.23: Soprano solos—Miss Hilda Hutt, (a) "The Little Damsel" (Novello); (b) "Spring's Awakening" (Sanderson).  
 8.28: Instrumental trios—Christchurch Broadcasting Trio, (a) "Ave Maris Stella" (Grieg); (b) "Waltz from String Serenade" (Tchaikowsky).  
 8.36: Mixed Quartet—Dulcet Quartet, "The Farmer's Daughter" (Williams).  
 8.40: 'Cello solo—Mr. Harold Beck, "Barcarolle" (Sitt).  
 8.44: Orchestral suite—Philadelphia Symphony Orchestra, "Casse-Noisette" (Nutmacker Suite) (Tchaikowsky); (a) "Waltz of the Flowers" (H.M.V. Record D1216).  
 8.52: Contralto and baritone duet—Dulcet Duo, "The Spider and the Fly" (Smith).  
 8.56: Pianoforte solos—Miss Aileen Warren, (a) "Elevation" (Chaminade); (b) "Valse Brillante" (Druand).  
 9.2: Humorous recital, followed by concerted musical comedy selection—(a) "Bertram at the Rotary Dinner" (Merry) (H.M.V. Record C1340); (b) Vocal Gems from "The Vagabond King" (Friml), (H.M.V. Record C1346).  
 9.10: Weather forecast.  
 9.12: Orchestral—Philadelphia Symphony Orchestra, "Nutmacker Suite" (Tchaikowsky); (a) "Overture Miniature and March"; (b) "Dance of the Sugarplum Fairy and Trepak" (H.M.V. Record D1214).  
 9.20: Contralto solo—Miss Nellie Lowe, "Lad o' Mine" (Oliver).  
 9.24: Two-step—Willyams Dance Orchestra, "National Game" (Sousa).  
 9.29: Tenor solos—Mr. T. G. Rogers, (a) "Roses" (Adams); (b) "Good Company" (Adams).  
 9.35: Instrumental trio—Christchurch Broadcasting Trio, "Scherzo" from "Second Trio" (Schubert).  
 9.43: Mixed Quartet—Dulcet Quartet, "The Soldiers' Chorus" ("Faust") (Gounod).  
 9.47: Humour—Will Gardner, "A Little Bit of Heaven" (Gardner), (Zonophone Record 5079).  
 9.51: Waltz—Willyams Dance Orchestra, "When you Played the Organ and I Sang the Rosary" (Gilbert) (Vocal quartet by the orchestra).  
 9.55: Contralto solos—Miss Nellie Lowe, (a) "Red Rose of England" (Oliver); (b) "Gretna Green" (Oliver).  
 9.59: Comedian with piano—"C.O.N.S.T.A.N.T.I.N.O.P.L.E." (Carlton), (Zonophone Record 5091).  
 10.3: One-step—Willyams Dance Orchestra, "Here Comes Springtime" (Ban-jolinist, Mr. W. A. East) (O'Hagan).  
 Dance programme until 11 p.m.  
 11.0: Close down.

### 4YA, DUNEDIN (463 METRES)—FRIDAY, NOVEMBER 9.

- 3 p.m.: Town Hall chimes.  
 3.1: Selected gramophone items.  
 3.30: Relay of afternoon-tea music from the Savoy.  
 3.45: Studio music.  
 4.0: Relay of music from the Savoy.  
 4.15: Gramophone music.  
 4.25: Sports results.  
 4.30: Close down.  
 6.0: Town Hall chimes.  
 6.1: Children's hour conducted by Aunt Sheila and Big Brother Bill.  
 7.15: News session.  
 8.0: Town Hall chimes.  
 8.1: Band selection—Band of H.M. Grenadier Guards, "Martial Moments" (arrgd. Winter) (Columbia Record 9065).  
 8.9: Mezzo-soprano solos—Miss Molly Vickers, (a) "Ye Banks and Braes" (traditional); (b) "Kitty of Coleraine" (traditional).  
 8.16: Cornet solo—Mr. George Christie, "Lizzie" (Hartmann).  
 8.22: Orchestral selection—Victor Symphony Orchestra, "Kamennoi-Ostrow" (Cloister scene) (Rubinstein) (H.M.V. Record EB10).  
 8.26: Baritone solo—Mr. L. M. Cachemaille, "Love That's True" (Handel).  
 8.30: Recitals—Miss Madge Yates, (a) Monologue, "Girls" (Anon); (b) "For the Fallen" (Budge).  
 8.38: Violin solo—Fritz Kreisler, "Caprice Viennois" (Kreisler), (H.M.V. Record DB1091).  
 8.42: Mezzo-soprano solo—Miss Molly Vickers, "Down the Vale" (Moir).  
 8.45: Cornet solos—Mr. George Christie, (a) "Il Moi Tesoro" (Mozart); (b) "La Serenata" (Schneider).

- 8.53: Orchestral selection—Philadelphia Symphony Orchestra, (a) "Toccata and Fugue in D Minor" (Bach) (H.M.V. Record D1428).  
 9.1: Baritone solos—Mr. L. M. Cachemaille, (a) "The Wanderer" (Schubert); (b) "Triumph" (Carissini).  
 9.8: Weather forecast.  
 9.10: Recital—Miss Madge Yates, "Morning Thanksgiving" (Drinkwater).  
 9.14: Organ solos—Edwin H. Lemare, (a) "Chant De Bonheur" (Song of Happiness) (Lemare); (b) "Aloha-oe" (Farewell to thee) (Liluiokalani). Zonophone Record EE93.  
 9.21: Relay of dance music from the Savoy.  
 10.0: Close down.

## Saturday, November 10

### 1YA, AUCKLAND (333 METRES)—SATURDAY, NOVEMBER 10.

- 3 p.m.: Afternoon session—Selected studio items.  
 4.0: Literary selection by the Announcer.  
 4.8: Selected studio items.  
 4.25: Sports results to hand.  
 4.30: Close down.  
 6.0: Children's session, conducted by Cinderella.  
 7.15: News and market reports. Sports results.  
 8.0: Chimes.  
 8.1: Instrumental selection—Savoy Orpheans, "Hit the Deck" (Youmans).  
 8.9: Baritone solo—Mr. Clinton Williams, "Nirvana" (Adams).  
 8.13: Instrumental trio—Auckland Trio, "Tannhauser" selection (Wagner).  
 8.22: Soprano solo—Miss Christina Ormiston, "Rose Softly Blooming" (Spohr).  
 8.26: 'Cello solo—Miss Molly Wright, "Rustic Dance" (Squire).  
 8.30: Baritone solos—Mr. Clinton Williams, (a) "Jane" (Barker); (b) "Because I Were Shy" (Johnston).  
 8.37: Humour—Will Kings, "Bertram Addresses the Tenants" (Rutherford), (H.M.V. record C1340).  
 8.41: Soprano solos—Miss Christina Ormiston, (a) "The Lotus Flower" (Schumann); (b) "Thou'rt Like a Lovely Flower" (Schumann).  
 8.48: Instrumental trio—Auckland Trio, "Anitra's Dance" (Grieg).  
 8.52: Weather forecast.  
 8.54: Programme of dance music.  
 11.0: Close down.

### 2YA, WELLINGTON (420 METRES)—SATURDAY, NOVEMBER 10.

- 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 Toby and Aunt Gwen.  
 7.0: News session, market reports and sports results.  
 8.0: Chimes of the G.P.O. clock.

#### SPECIAL "DIGGER" PROGRAMME.

- 7.45: Zero hour.  
 Zero, plus 15 town clock hits up a "Feu de Joie" of eight from the Post Office gun pit. Diggers of Wellington, Auckland, Canterbury and Otago Regiments will "Fall in" (tune in), "dress on company markers," "stand easy" prior to "standing to," and then "stand by" for the opening barrage.  
 PRESS: Full listening order. Gas masks only.  
 KIT: All Diggers must carry location maps (latest edition) showing wave-length of 2YA.  
 ORDER OF PARADE: Not known.  
 PARADE GROUND: 2YA Studio and Brown Study.  
 Officers, N.C.O.'s, and other ranks will receive instruction and entertainment on the following subjects:—  
 "Recruiting" Scottie (Doug. Stark), "Where are the Lads of the Village To-night?" (How do we know), "Sister Susie's Sewing Shirts," "Just Before the Battle, Mother," "The Army of To-day's Alright" (Cpl. Allwright); "There's a Song Down Every Roadway," "Till the Boys Come Home," "Goodbye-e," "Pack Up Your Troubles in Your Old Kit-bag," "Take Me Back to Dear old Blighty," "Mademoiselle from Armentieres," "Farewell Song" (Melodie Four); "Roses of Picardy," "Laddies Who Fought and Won," "Ta, Ta, Ma Bonnie Maggie Darlin'," "Little French Baby," "Disorderly Room," "Bombing Instructions," "Sick Parade," "The Waggle o' the Kilt," "Rosie."  
 Orchestral: "Martial Moments," "Vanished Army" (Alford), "Private Ortheris," "Bells of St. Mary's". (Selections will be made from the above as Company Commanders deem fit).  
 Detailed for "Diggers' Programme" Fatigue: Melodie Four, L/Cpl. Doug. Stark (Scottie), Staff Sergt. R. Walpole.  
 Headquarters' staff: (Writer) Lieut. Denouncer, Sergt.-Major Trim-einup.  
 10.0: Lights out.  
 10.1: Dance programme.  
 11.0: Close down.

### 3YA, CHRISTCHURCH (306 METRES)—SATURDAY, NOVEMBER 10.

- 11.30 a.m.: Results of Canterbury Jockey Club's Meeting at Riccarton, interspersed with items from the studio.  
 4.30: Close down.



- 6.0: Children's session conducted by Aunt Pat.  
 7.15: News session.  
 7.30: Sports results.  
 8.0: Chimes.  
 Rebroadcast of 2YA, Wellington ("Digger" Programme).  
 Close down.

**4YA, DUNEDIN (463 METRES)—SATURDAY, NOVEMBER 10.**

- 7.15 p.m.: News session.  
 7.30: Address.  
 8.0: Town Hall chimes.  
 8.1: Relay of orchestral music from the Strand Theatre Orchestra under the direction of Mr. L. D. Austen.  
 8.16: Recital—Miss Roberta Williams, "The Obstructive Hat" (Anon.).  
 8.20: Violin solos—Mr. A. R. Watson, (a) "In a Monastery Garden" (Ketelbey); (b) "Canzonetta" (Poussard).  
 8.27: Song Cycle—"The Daisy Chain" (Songs of Childhood) by Liza Lehmann, presented by the 4YA Harmonists.  
 Quartet—"Foreign Children" (Lehmann).  
 Mezzo-soprano solo—Miss Mollie Andrews, "Fairies" (Lehmann).  
 Baritone solo—Mr. F. M. Tuohy, "Keepsake Mill" (Lehmann).  
 Soprano solo—Miss Roma Buss, "If No One Ever Marries Me," (Lehmann).  
 Tenor solo—Mr. Chas. C. Scott, "Stars" (Lehmann).  
 Quartet—"Seeing the World" (Lehmann).  
 Mezzo-soprano solo—Miss Mollie Andrews, "The Ships that Sailed into the Sun" (Lehmann).  
 Soprano solo—Miss Roma Buss, "The Swing" (Lehmann).  
 Baritone solo—Mr. F. M. Tuohy, "Mustard and Cress" (Lehmann).  
 Tenor solo—Mr. Chas. C. Scott, "The Moon" (Lehmann).  
 Quartet—"Thank You Very Much Indeed" (Lehmann).  
 Quartet—"Blind Man's Buff."  
 9.3: Weather forecast.  
 9.5: Relay of orchestral music from the Strand Theatre.  
 9.15: Tenor with chorus and orchestra—Jas. Liddy, "Memories" (from "The Student Prince") (Romberg) (Columbia Record 02511).  
 9.19: Flute solos—Mr. J. W. Stewart, (a) "Mazurka Op. 6 No. 1" (Chopin); (b) "Caprice" (Krantz).  
 9.27: Recitals—Miss Roberta Williams, (a) "Penarby Mine" (Doyle); (b) Monologue, "Out at Mons (Anon.).  
 9.33: Characteristic Intermezzo—Ketelbey's Concert Orchestra, "Bells Across the Meadows" (Ketelbey) (Columbia Record 02695).  
 9.37: Vocal solo (baritone)—Fraser Gange, "Slumber On, My Little Gipsy Sweetheart" (Herbert) (Columbia Record 02574).  
 9.41: Violin solo—Mr. A. R. Watson, "Indian Lament" (Dvorak-Kreisler).  
 9.45: Tenor solo in Maori—Ernest McKinley, "Song of the Locust" (Hill) (Columbia Record 01061).  
 9.49: Flute solos—Mr. J. W. Stewart, "Salterello" (German).  
 9.55: Foxtrot—La Nuova Orchestra, "Italian Foxtrot" (Di Bapoli) (Columbia Record 3066).  
 9.59: Waltz—Jacque Jacobs' Ensemble, "Vienna Life" (Strauss) (Columbia Record 02556).  
 10.3: Close down.

**Sunday, November 11****1YA, AUCKLAND (333 METRES)—SUNDAY, NOVEMBER 11.**

- 3 p.m.: Afternoon session—Selected studio items.  
 4.0: Literary selection by the Announcer.  
 4.8: Studio items.  
 4.30: Close down.  
 6.0: Children's session, conducted by Uncle Leo.  
 7.0: Relay of service from Church of Christ. Preacher, Mr. Chas. Garrett; organist, Mr. H. Knowles; choirmaster, Mr. W. Thomson.  
 8.30: Selected items from the studio.  
 9.30: Close down.

**2YA, WELLINGTON (420 METRES)—SUNDAY, NOVEMBER 11.**

- 3 p.m.: Chimes of the General Post Office Clock, Wellington.  
 3.1: Relay of Armistice Day Disarmament Meeting from the Town Hall.  
 6.0: Children's Sunday service conducted by Uncle Ernest.  
 7.0: Relay of Evening Service from St. John's Presbyterian Church. Preacher, Rev. J. R. Blanchard, M.A. Organist and Choirmaster, Mr. C. W. Kerry.  
 8.15 (approx.): Studio concert:  
 Overture—New Queen's Hall Light Orchestra, "Britannia Overture" (Columbia Record 02586).  
 Trio—Wellington Ladies' Trio, "How Lovely are the Messengers" (from "St. Paul") (Mendelssohn).  
 "Cello solo—W. H. Squire, "Melodie in E." (Rachmaninoff-Squire) (Columbia Record 04130).  
 Soprano solo—Miss Nora Gray, Recit. and Aria "And When He Had Spent All" and "O That Thou Hadst Hearkened" from "The Prodigal Son" (Sullivan).

- Pianoforte solos—Mark Hambourg, (a) "Au Bord D'Une Source" (Liszt); (b) "Nocturne in E Major" (Chopin) (H.M.V. Record 1454).  
 Contralto solos—Miss Mollie Fenton, (a) "From Grief I Cannot Measure" (Franz); (b) "Spin, Spin" (Jungst).  
 Violin solo—Joseph Szigeti, "Slavonic Dance in G Minor, No. 1" (Dvorak-Kreisler) (Columbia Record 04129).  
 Vocal duet—Misses Nora Gray and Mollie Fenton, "On Wings of Song" (Mendelssohn).  
 'Cello solo—Gaspar Casado, "Le Cygne" (The Swan) (Saint-Saens). (Columbia Record 03579).  
 Trio—Wellington Ladies' Trio, "The Snow" (Elgar).  
 Orchestral selection—Victor Symphony Orchestra, "Dance of the Hours" (from "Gioconda" (Poncheilli) (Zonophone Record EF12).  
 Mezzo-contralto solos—Mrs. P. J. Townley, (a) "I Am Not Fair" (Tosti); (b) "At Parting" (Rogers).  
 Cornet solo—"Stars in a Velvety Sky" (Clarke) (Columbia Record 01065).  
 Vocal duet—Misses Nora Gray and Mollie Fenton, "Welsh Cradle Song" (Williams).  
 Organ solos—R. Arnold Grier, F.R.C.O., A Group of National Airs (Zonophone Record 5087):—  
 1. "Hearts of Oak."  
 2. "The British Grenadiers."  
 3. "Home, Sweet Home."  
 4. "The Bonnie Banks of Loch Lomond."  
 5. "Annie Laurie."  
 6. "Men of Harlech."  
 7. "The Minstrel Boy."  
 8. "Rule Britannia."  
 Trio—Wellington Ladies' Trio, "A Peat Fire Smoothing Prayer" (Arrgd. Hugh Roberts).  
 Band and chorus—Band of H.M. Grenadier Guards with chorus, "Pomp and Circumstance (Elgar); "Land of Hope and Glory" (Columbia Record 9080).  
 Close down.

**3YA, CHRISTCHURCH (306 METRES)—SUNDAY, NOVEMBER 11.**

- 3 p.m.: Gramophone recital (electrically reproduced).  
 4.30: Close down.  
 5.30: Children's song service conducted by Uncle David.  
 6.30: Relay of anniversary service of Oxford Terrace Baptist Sunday School. Preacher, Rev. J. Robertson, M.A. Conductor, Mr. Wilfred Drayton. Organist, Mr. W. Melville Lawry. Pianiste, Miss V. Halliday, A.T.C.L.  
 8.0 (approx.): Studio concert.  
 Orchestral selection—Philadelphia Symphony Orchestra, "Toccata and Fugue in D Minor" (Bach) (H.M.V. Record D1428).  
 Mezzo-soprano solos—Mrs. Hilda Reeve, (a) "Thoughts" (Howard); (b) "Parted" (Tosti).  
 Orchestral selections—Victor Symphony Orchestra, (a) "Kammenoi Ostrow" (Cloister Scene) (Rubenstein); (b) "Liebestraum" (Dream of Love) (Liszt) (H.M.V. Record EB10).  
 Tenor solo—Mr. W. Bradshaw, "The Lord is My Light" (Allitsen).  
 Boy soprano, with organ accompaniment—Master Lough, "Hear Ye, Israel" (Mendelssohn) (H.M.V. Record B2627).  
 Mezzo-soprano and tenor duet—Mrs. Hilda Reeve and Mr. W. Bradshaw, "Oh, That We Two Were Maying" (Smith).  
 Orchestral selections—International Concert Orchestra, (a) "La Spagnola" (The Spanish Dancer) (Di Chiara); (b) "Tesora Moi" (My Treasure) (Becucci) (Zonophone Record EF15).  
 Mezzo-soprano solo—Mrs. Hilda Reeve, "The Old Countree" (Pinsuti).  
 Wurlitzer organ solo, followed by contralto solo with organ, 'cello and harp accompaniment—(a) Reginald Foort, "A Brown Bird Singing" (Haydn-Wood) (H.M.V. Record B2664); (b) Maartu Offers, "Omra Mai Fu" (from "Xerxes") (Handel) (H.M.V. Record DA816).  
 Tenor solo—Mr. W. Bradshaw, "Mona" (Adams).  
 Duet in Italian with orchestra, followed by boy soprano with organ accompaniment, (a) John Hislop and Apollo Granforte, "Soleme in Questa Ora" (Swear at This Hour) (Verdi) (H.M.V. Record DB939); (b) Master Lough, "I Know that My Redeemer Liveth" (Handel) (H.M.V. Record B2656).  
 Soprano and tenor duet—Mrs. Hilda Reeve and Mr. W. Bradshaw, "A Night in Venice" (Luocantoni).  
 Band—Band of H.M. Coldstream Guards, "Poet and Peasant" (Suppe) (H.M.V. Record C1315).  
 Close down.

**4YA, DUNEDIN (463 METRES)—SUNDAY, NOVEMBER 11.**

- 5.30 p.m.: Children's song service conducted by Big Brother Bill.  
 6.30: Relay of service from Knox Church. Preacher, Rev. Tulloch Yuille, B.D., M.A. Organist, Mr. Roy Spackman.  
 7.45: Relay of organ solos by Mr. Spackman.  
 8.0: Relay from St. Kilda of concert by the St. Kilda Band under the conductorship of Mr. James Dixon.  
 Close down.

### How Many Licenses Needed?

I HAVE a five-valve receiving set, and have paid the usual license fee of 30s. for it. I am thinking of buying a small crystal set for use when my valve set breaks down or when its battery is being recharged. If I bought a crystal set and used it in the same house and room as my valve set, would I have to pay a license fee for it also? The information would much oblige.—Aucklander.

[No, one license only is required in your case.—Ed.]

### A Hospital View.

THIS is my first appearance in the "Mail Bag" column of the "Record," but after last night's transmission of 2YA I feel I must let those responsible know how they excelled themselves.

I tuned in at 8.30 (Friday, 19th) and heard the organ solo record of "Polly," then the orchestra played the ever-beautiful "Star of Eve." This number, in my humble opinion, was absolutely perfect in every way—the way the strings came through was wonderful and lifelike in the extreme. There were no background noises, and it needed no stretch of the imagination to think that one was sitting amongst the players. I use a carborundum crystal set of my own construction, and I have yet to hear a valve set to beat it for clarity, freedom from interference, and faithful reproduction of the characteristics of the various instruments and voices. The station engineers, the players, and the arranger of "Star of Eve" (Mr. Bellingham) are to be highly complimented on the performance of this number. I should be very interested to hear other listeners' opinions of last night's reception and programme in general, and must say that should they report indifferent results it will be because of circumstances over which the station has no control whatever.

In reference to the ever-present "jazz versus classical" controversy, I would suggest to both sides that more toleration in respect to others' tastes would bring about a happier state of affairs. I have been in contact with good music all my life, but can tolerate a certain amount of the jazz type of item, whether record or "personal" rendering.

In conclusion, I voice the opinion of the majority of the patients in this institution in saying that the football, boxing, racing (and lately the 23 hours' broadcast of the Southern Cross epic) have all been keenly appreciated and we look forward to their continuation in the future.—"Tutanekai" (—Hospital).

### DX Details.

PERMIT me to endorse the remarks of Mr. C. C. Bradshaw re the publishing of descriptions of sets used by DX hunter. As one of the worst kind of DX fiends, I for one would greatly appreciate it. I should also like to point out that the station operated by the Crosley Company in America is W8XAL, not WHXAL. The announcer went to great pains to make this clear last Wednesday week. X9XF is to be found just below 2BL. I use a four-valve Browning Drake, aerial 140ft. long, 35ft. high, earth, pump bore 35ft. deep. In conclusion, I would like to tell any other DX fans who may be interested, if you want really long-dis-

# Our Mail Bag

Will correspondents please practice brevity, as heavy demands are now made on space. All letters must be signed and address given as proof of genuineness; noms de plume for publication are permitted. Address correspondence Editor, "Radio Record," P.O. Box 1032, Wellington.

tance reception use British parts only. You will notice the difference.—B.D.

### Gramophone Appreciated.

I THINK the inclusion of gramophone records in the evening programmes an excellent idea. I am hoping the Broadcasting Company will continue to make this a feature of their evening entertainments. Our local artists are quite good, some quite first class, a good many quite second rate, but I think all must agree the artists to be heard from gramophone records are nearly all 100 per cent. excellent. I am quite certain it is the lighter class of music the majority of listeners prefer, and I think if the Broadcasting Company wish to keep the present listeners and get many more they will consider this. I would like to hear a Wurlitzer organ solo and a humorous elocutionary item (gramophone) included in each evening's programme.—Yours, A to Z (Marlborough).

### The Flight.

PERMIT me to express a word of appreciation of the service given by 2YA on the occasion of the return Tasman flight.

In both broadcast and rebroadcast from 2BL the results as experienced were excellent, everything coming through as clearly as one could wish.

When one considers the long hours worked by all connected with the station so that listeners should have the opportunity of following the flight from start to finish, it becomes obvious that we are under a great obligation, and the achievement undoubtedly offsets many of the imaginary complaints we see voiced occasionally in these columns.

I would like to see also some acknowledgment of the long hours worked by the officers of the Wellington Radio Office, upon whose work so much of 2YA information depended.—Appreciative.

### Dance Lovers Called to Arms.

I SUPPOSE there has been dance music in various forms as far back as the world goes, and it is still going strong to-day. (Ask any music or gramophone dealer what are his best sellers.) Dance music is here to stay, but I am quite convinced that the Broadcasting Company have not tackled this problem seriously yet.

On glancing through this week's programme for 2YA I find Monday, Tuesday, Thursday, Friday, and Sunday entirely devoid of anything like dance music, while on Saturday we get one hour of dance music. I think this is a poor compensation for the dance lovers. I'm sure it is high time the company had a dance session from 9.30 till 10 p.m. from one of the three main stations every night except Sundays. Now you dance followers, you pay with the rest, so stick out for your rights.—"Give Us Our Share."

### Servicing Sets.

I ENCLOSE a short article from "Wireless Weekly," of 12/10/28.

The article runs as follows:—"Radio reception is what you make it. Radio reception is better to-day than ever it was, but few listeners really take advantage of the improved conditions, and, of course, there is a great deal more to be done. Listeners, in general, comment most unfairly on our broadcasting stations and receiving conditions—whilst actually it is the listener himself who is at fault. A great many people have receivers that have passed or seen their day in early broadcasting and still continue to think they should get good results such as those possible on present-day receivers. If reception is not good, these people blame all noises due to loose connections, dust, dirt, run-down batteries, and other causes to poor old static, and yet do not service their sets in the least. Listeners must keep up with the times as broadcasting stations do. Improvements and changes in our broadcasting stations are having a marked effect, but old receivers are not capable of the life-like reproduction that is possible to-day. Radio reception is what you make it."

This article contains very true facts, yet in spite of the great amount of useful information to be obtained free by every listener he still expects his set to go properly simply by winding it up like a gramophone.—N. C. Winstanley (Picton).

### Can Anyone Oblige?

I WONDER if some reader would identify this station for me. Listening last Friday night (October 19) (at 12.20, New Zealand summer time) I heard a station on about 280 metres advertising denim overalls for \$1.50 a pair; also some records, and one time he announced that the next musical number on our morning programme would be "Get Out and Get Under the Moon."

I heard this transmission on a 3-valve set, and owing to static could only get the call letters KL (?). Before closing I would like to thank the Broadcasting Company for the way in which they handled the Southern Cross flight. Carry on the good work.—A. E. Ireland (Taradale).

### Some Human Appreciation.

ALLOW me to pen a few lines in appreciation of the very great service being rendered to the community in general by the Radio Broadcasting Company, and by your very valuable paper. We human beings, as a rule, are not a very appreciative species, but it must be conceded that the service from 2YA in particular is absolutely first-class no item of interest even that which appeals to a minority of listeners, is allowed to pass unnoticed, everything being "put over" with the least possible delay. Our 30s. gives in my opinion the best return that one can expect in so small a country. Why, we have not the population of a decent city, and yet we have the "growler" (who like the poor is ever present) demanding programmes to compare with England. The Tasman flights were a

very great credit to the company, and my wife wishes to thank Mr. Ball in particular for his very great forethought in "cutting out" the jazz on the stroke of midnight. It was an act of a man who considered the feelings of those who, not like ourselves, who perhaps would not mind whether it was Sunday or Monday, respect the Sabbath, and to our mind was a most thoughtful act. Sports news, market reports, great visitors, any item at all of interest to anyone is broadcast, and must serve a great educational purpose.

The kiddies sessions are "great," the various Aunts and Uncles be they "Gwens," "Tobys," "Ernests", etc., they one and all deserve the utmost credit and thanks for the great work they so cheerfully undertake.

The action proposed in connection with the elections, must be greatly appreciated by all, be they Reformers, Labour or United, all are deeply interested in results, and may I suggest to the "Record" that together with the chart being prepared, they publish the last result of each electorate alongside this year's candidates.

In conclusion let me say, that with a two valve set, home-made at that, I invariably get 2YA exceedingly well, indeed, on the loud speaker, so loud in fact, that one can hear all over the house, and on good nights fifty or sixty yards away from the house on the road outside. I also get 1YA and 3YA, but not so good, although occasionally 3YA is as loud as Wellington. I am not a long distance fiend, but have had thirty-six stations on my set all told, even having KFON and JOAK on the speaker faintly, and pretty good on 'phones, not to mention the Australian stations, a large number of which I have had and get regularly on the speaker. However, I consider that 2YA is the best of the crowd, and certainly is most popular with my circle of listeners. Wishing you the best of luck and a huge increase of licenses.—Yours faithfully,—"Well Satisfied" (Hastings).

### Signal Strength

THE "R" system of indicating audibility or strength of reception originated with the American Radio Relay League—the strongest body of organised radio amateurs in the world. Members of the "A.R.R.L." as it is called, handle a great deal of important traffic in the way of telegrams to and from out-of-the-way places. (In fact, the U.S. radio amateurs have more than once been able to perform national services owing to the efficacy of their short-wave relay system.)

In order to promote good working between the different stations it became necessary to have a standard series of abbreviations to indicate the various signal strengths. This was the original "R" system as applied to radio, and given in the rules and regulations of the A.R.R.L.

- R1.—Faint signals, just audible.
- R2.—Weak signals, barely readable.
- R3.—Weak signals, but readable.
- R4.—Fair signals, easily readable.
- R5.—Moderately strong signals.
- R6.—Strong signals.
- R7.—Good, strong signals, readable through interference.
- R8.—Very strong signals, audible several feet from 'phones.
- R9.—Extremely strong signals.



# 2AQ (Taihape) Closes Down

**I**N 1922, when broadcasting in New Zealand was in its infancy, a young man in the rising bush town of Taihape became keenly interested in the possible developments of this new science. This young man, Mr. Morton Coutts, of Kuku Street, was to prove himself of unusual calibre, and to earn for himself a noted reputation

## OZ-2AQ Goes on the Air.

**E**ARLY in 1922, using the Radiotron receiving valves, UV201 and V24, this young man established his station, OZ-2AQ, which later was to be heard in all quarters of the globe. The receiver installed, on which Mr. Coutts heard music fairly regularly, consisted of two stages of RF and four audio stages. "In these days," says he, "we did not bother about quality. Volume was the first and last consideration every time."

By March, 1923, using a 10-watt transmitter, station 2AQ was heard broadcasting a concert—the Diggers' Concert from the Town Hall. This was one of the earliest in New Zealand.

Following this, reports were received from Sydney stating that both speech and music were being received there clearly. Mr. Coutts had established one of the first communications on telephony with the outside world.

New Zealand listeners looked forward to these broadcasts, which were becoming a feature for listeners situated some considerable distance from Taihape.

**I**N 1924, his broadcasts of concerts had become quite a feature, as a letter from a Cromwell listener, dated April 11, 1924, will show: "2AQ, Taihape, has been heard 310 yards from my loudspeaker. He is the loudest station I hear, including 4TG." A similar letter was received from Russell.

These transmissions were accomplished with a 201A receiving valve with 100 volts on the plate. The input was 5 watts. In Wellington music was picked up on a one-valve set.

June, 1924, saw 2AQ recognised as the most reliable New Zealand amateur and this reputation he retained.

## Communication With England.

**I**N May, 1924, by radiating 41 amperes, morse from 2AQ was picked up at a distance of 3500 miles. This same month two new 95ft. Oregon pine masts were erected. A double cage aerial was employed leading down almost vertically to the transmitting room. For some time this new apparatus refused to function, but finally 2AQ went on the air to establish fresh records.

**L**ATE in 1925 communication was established with England and U.S.A. These tests were carried out on telephony as well as with morse. On one occasion, operating on shortwave two-way communication with 2CC, Stockton-on-Tyne, England, was established. Shortly afterwards a report was received congratulating Mr. Coutts. In the course of his letter the writer says: "Your strength is better than KDKA or WGY (powerful American stations) on 40 meters"—150 watts output had been used.

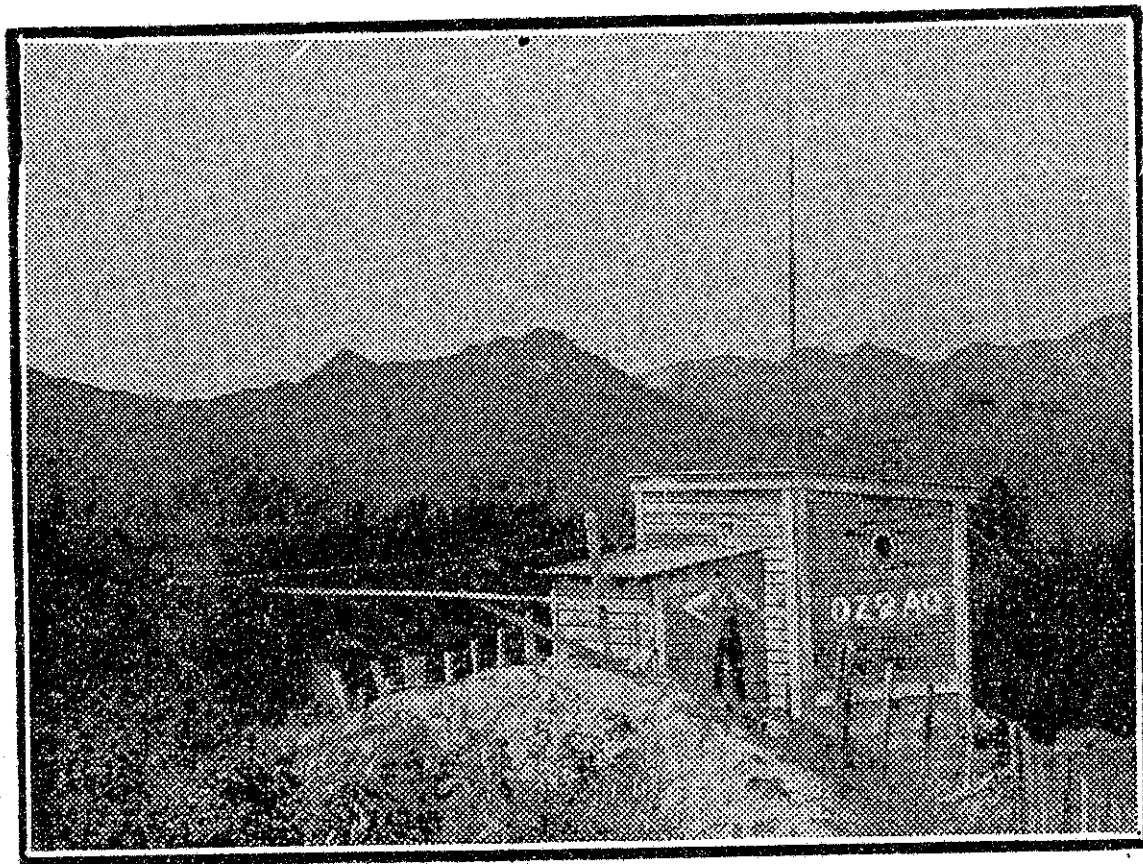
Early in 1926, 2AQ resumed concert

broadcasting, which he had neglected during his experiments on shortwave. His oscillator was a 250 watt Marconi valve, power input 200 watts with an output of 100 watts. The modulator valve was a 5 watt Radiotron, while the microphone was taken from an old Federal telephone. Listeners claimed that, with this humble microphone, music and speech which could not be surpassed in the country was produced.

## The New Station.

**A**BOUT November, 1926, the interference caused by nearby motors became so bad that work on the long waves became impossible, and the whole outfit was moved to a high position on the outskirts of the town. The illustration shows this new station.

In 1927 OZ-2AQ was considered the best amateur heard in Australia, as this extract from "Radio" of November, 1927, shows: "OZ-2AQ is the best of the New Zealanders; in fact, without exaggeration, he is putting out the best transmission in Australasia



Site of 2AQ (Taihape) now closing down.

amongst the amateurs. His signals are R8-9 here; he is also being received in America at R6-7." In January of this year the same paper says: "OZ-2AQ comes in like the proverbial ton of bricks, and should give five minutes' notice whilst operators place weights on their loudspeakers." By this time he had adopted crystal control, and was confining himself almost exclusively to the shorter waves.

## Important Tests.

**I**N April of this year far-reaching fading tests were carried out, but owing to the temporary long wave aerial being blown down in a gale these were not completed. However, the following data was obtained:—Power used ranged between 200 and 300 watts. The aerial was a single No. 14 wire, about 200 feet long, with a counter-poise consisting of three wires the same length as the aerial spaced four feet apart at the far end, and brought together at the near end.

With the aerial 60 feet above the counterpoise, strength was still R9, but

fading slight. Aerial 12 feet above counterpoise, strength R9, but fading slightly more. Owing to the mishap with the aerial, Mr. Coutts was unable to finish this test, so it is not known if it was the difference in height or capacity of the aerial which made the difference.

It was found that by using a high percentage of modulation in the carrier wave fading was slight, but when the fade did occur the music was distorted. By cutting down the percentage of modulation fading was still about the same, but the music was not distorted the length of the fade period.

These facts were derived from about 1000 reports from all over New Zealand.

## To Pioneer Television.

**N**OW the pioneering work in radio has been completed, Mr. Coutts is closing down and selling his excellent plant. He is leaving for Auckland, and is afraid his plant would interfere with crystal users. But his researches have not finished, and provided he can obtain a permit he will erect a low-

ing telephoned 5CL immediately after the landing, and stated that the aeroplane had come down in a rough paddock and was smashed.

It was immediately recognised at 5CL that anxiety would be felt in the south-east for the safety of the passengers, who had embarked in the plane at Mount Gambier, and within a few minutes of the news being received at the studio, a car had left for the scene of the landing, with representatives of the station on board.

Within an hour these representatives secured all the details of the landing, and telephoned the studio. This enabled 5CL to assure the Mount Gambier listeners of the safety of the passengers hours before most Adelaide people had even heard of the plane's descent. Recently, too, 5CL was heard calling for medical assistance for a fever-stricken man at an inland constructional camp.

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**A**NOTHER instance of the service that may be rendered to the community by the co-operation of broadcast listeners and the broadcasting stations was seen in the case of the recent forced landing of the "Old Gold" passenger aeroplane at Uraidla, a town in the hills near Adelaide. A broadcast listener living near the scene of the land-

# An Amplifier for Quality and Volume.

## Details of "Push-Pull"

By "Pentode"

**I**T is not so very long ago that the wireless enthusiast built a receiver with the only available components, the best in those days, and set and listened in awe to the barely recognisable speech and music issuing from throaty horn loudspeakers. Given the same components, it is doubtful if we could do much better to-day, except that the greatly improved transmission might assist to some extent. Dealing purely with the amplification of received signals, practically no difference exists between the circuits used in the very latest products and those used some years ago.

### Power Valves.

**ONE** development which has greatly assisted radio to take its place in the home as a source of music rather than just a hobby, is the use of power valves with their associated high plate voltages. It has been very truly said that, using but one valve in the last audio stage, real music cannot be obtained with less plate voltage than some two or three hundred. The inconvenience of supplying this voltage and the danger associated with it militates very strongly against its use, however, and we are forced to look for some alternative means of obtaining the required power output. By "power output" it does not necessarily mean volume. Taking the range of audible musical frequencies from thirty to ten thousand cycles per second, very much more power is required to produce notes of, say, sixty cycles, than a note of, say, a frequency of two thousand, with the same intensity.

To obtain faithful reproduction of either music or speech, none of the lower frequencies must be suppressed, as they certainly would be if there was insufficient power available to operate the speaker at the low frequencies under discussion. Certain types of

speakers tend to accentuate the low notes and try by this means to add what the amplifier will not give. The best procedure by far is to utilise an

amplifier that will faithfully amplify the low notes and not to rely for the bass notes on the booming and drumming effect produced by these speakers.

### Push-Pull Amplification.

**RETURNING** to the design of the amplifier suitable for the amateur's construction and use, it has previously been mentioned that the dangers involved do not warrant the use of high-plate voltages. There is another alternative circuit which can be used to give exactly the same effect as the other system using high-plate potentials. This is known as the push-pull method of amplification. Using two valves in push-pull, the voltage input which can be accommodated (and it is the ability to handle the input rather than give the output that denotes a "power valve") may in fact be as much as between three and four times what each valve would accommodate singly.

In the first place, the input is divided equally between the two valves, and in the second place, each valve can, if a very great output is desired, be so biased to the extreme bottom of the characteristic curve that it becomes quite safe to use larger maximum plate voltages than those specified by the maker of the valves in question. However, this is a technical point which need not trouble the constructor.

Although ninety volts will operate the amplifier about to be described, it is advisable to go up to 135 or 180 if possible.

The results obtainable will be equal to if not better than those obtained by using a single valve in the last stage and two or three hundred volts on the plate. Some suggestion regarding suitable valves and correct grid bias potential will be given later. The inevitable circuit diagram is given in figure 1. A small fixed condenser is inserted across the input terminals. In the transformer used by the writer (Ferranti) this condenser is incorporated in the shell of the transformer and is omitted in the construction. This condenser helps to by-pass high frequency currents from the detector as, if these currents pass into the audio side, grave distortion is liable to be set up, very often evident in the form of a high pitched whistle.

### The Transformer.

**A** much longer article than this would be needed to explain the theory of push-pull amplification, but on referring to the diagram it will be seen that the primary of the second transformer is used in the normal fashion. The secondary is divided into two equal halves, the two ends joining to the grids of two separate valves, while the centre tap is connected to C. battery negative. An output transformer is necessary. The primary in this case is centre tapped which joins to B bat-

tery plus, while the two ends are connected to the plates of the two valves. The secondary connects directly to the speaker terminals and thus it will be seen that the speaker is isolated completely from the B battery. No direct current will be flowing through the windings and therefore it is immaterial which way the speaker leads are connected.

### Constructional Details.

**BELOW** is given a list of the parts to be used. Because these components are mentioned, it does not necessarily mean that they are the only ones suitable. Practically all present-day manufacturers of reputable components that can be relied upon, but one word of warning would not be amiss. It is not good policy to buy cheap material. There is a saying, "Why spoil the boat for a hap'th of tar."

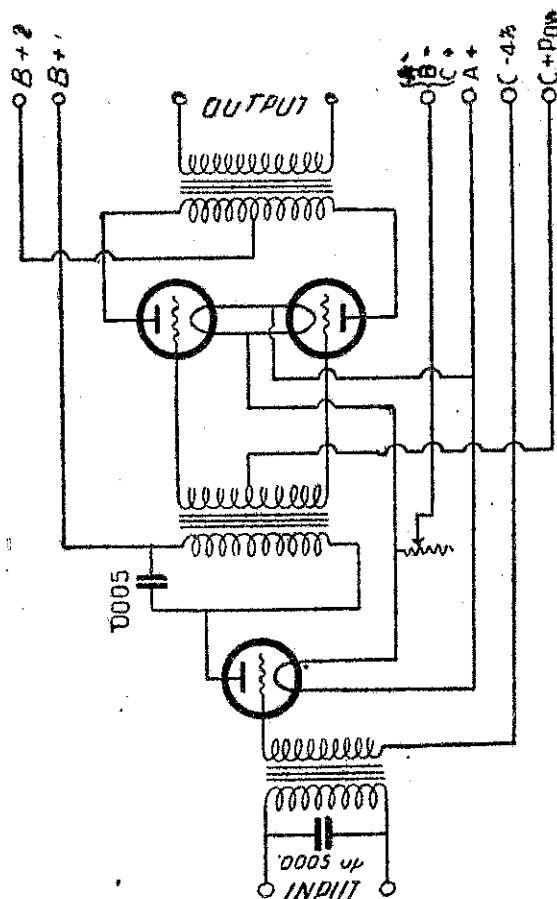
If the constructor decides on making a good amplifier, why spoil it by using even one transformer that happens to be a bit cheaper than one made by a firm of repute. The present case may be likened to a pipe through which a stream of water is passing. One obstruction anywhere along the tube will influence and retard the even flow of water from the outlet.

The baseboard, 15in. x 6in. x 5-8in. can be planed and stained any dark colour. No cabinet or front panel is used in this set, but a box in the form of a lid could easily be constructed to protect the whole from dust. Parts required:—

- 1 transformer (Ferranti) AF4 or AF3.
- 1 Push-Pull Transformer AF4C or AF3C (Ferranti).
- 1 Output Push-Pull Transformer OP6C or OP3C (Ferranti).
- 3 valve sockets.
- 1 Ingranic porcelain rheostat, 6 ohms.
- Terminal strip, 6in. x 1½in.
- 6 terminals.
- Baseboard 15in x 6in. x 5-8in.
- Busbar, sundry screws, etc.

The layout is quite symmetrical. On the left of the baseboard is screwed the first transformer AF4 or AF3, with the input (marked primary) terminals on the left. In the centre of the board the second AF3C or AF4C is screwed into place with the three terminals towards the right of the board. On the extreme right the output transformer is fastened with the speaker or output terminals at the opposite end to the input terminals on the left of the board.

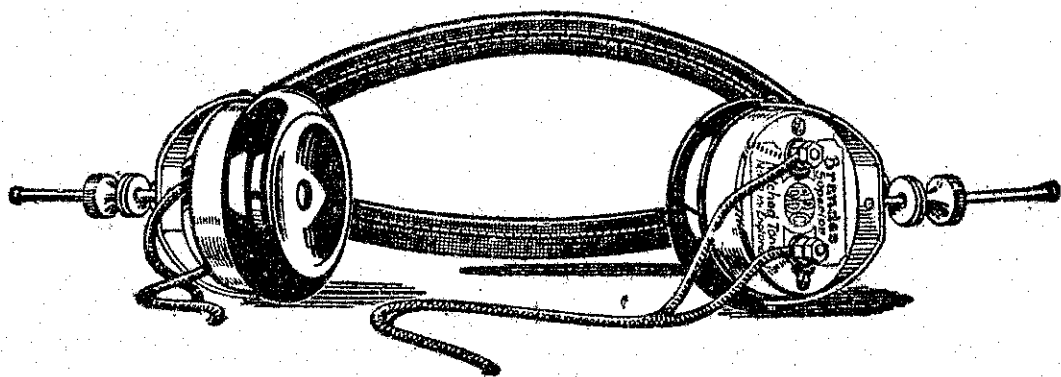
At the back between the first and second transformer, a valve socket is screwed with the grid and plate terminals or soldering lugs at the back as shown. In front of this is the rheostat. The Ingranic rheostat used can be adapted to baseboard mounting and the dial fastened by the grub screw so that it can be operated from the top. Between the second and third transformers are fixed the two remaining sockets with the grid and plate terminals at the back as before. Six terminals are arranged equidistant along the top edge of the ebonite strip, so that when this is screwed into place on the back of the board in the centre, the termin-



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al nuts will clear the wooden base-board.

### Wiring.

SO much for the layout. The next procedure is to wire up the components.

For this purpose it is preferable to use covered wire. Glazite is quite suitable although by far the easiest to handle is No. 18 SWG bare tinned copper wire and use pieces of spaghetti covering cut to the required length to insulate wires that are likely to touch. If valve sockets provided with terminals are used, then the whole assembling can be done without the use of a soldering iron. Connections to

B+ on the primary side of the centre transformer. The centre terminal on the output transformer joins directly to B+2 or the sixth terminal on the extreme right of ebonite strip.

Lastly, the grid and plate wires are connected to their respective places on the transformers. Grid of first transformer to grid of first valve. Plate of first valve joins to terminal marked P on primary side of centre transformer. The two terminals marked G on the secondary side of the centre transformer are joined to the two grids of the last two valve sockets.

Finally, the plate terminals of these two sockets are connected to the two

### Two Volt Series.

First Stage			Second Stage (Push-Pull)		
Plate voltage	Grid bias C-1		Plate voltage	Grid bias C-2	
PM I LF	90 volts	3 volts	PM2	90-150	12-20
A209	90 volts	4½ volts	B205	90-150	12-20
			B203	150	35
Four Volt Series					
PM3	90 volts	4½ volts	PM4	90-150	12-20
B409	90 volts	4½ volts	B406	90-150	12-20
B415	90 volts	3 volts	B403	150	40
Six Volt Series.					
PM5	90 volts	4½ volts	PM6	90-150	12-20
B609	90 volts	4½ volts	B605	90-150	12-20
B615	90 volts	4½ volts	B603	90-150	16-40
UX201A	90 volts	4½ volts	UX201A	90-180	12-25
			UX112	90-180	12-30

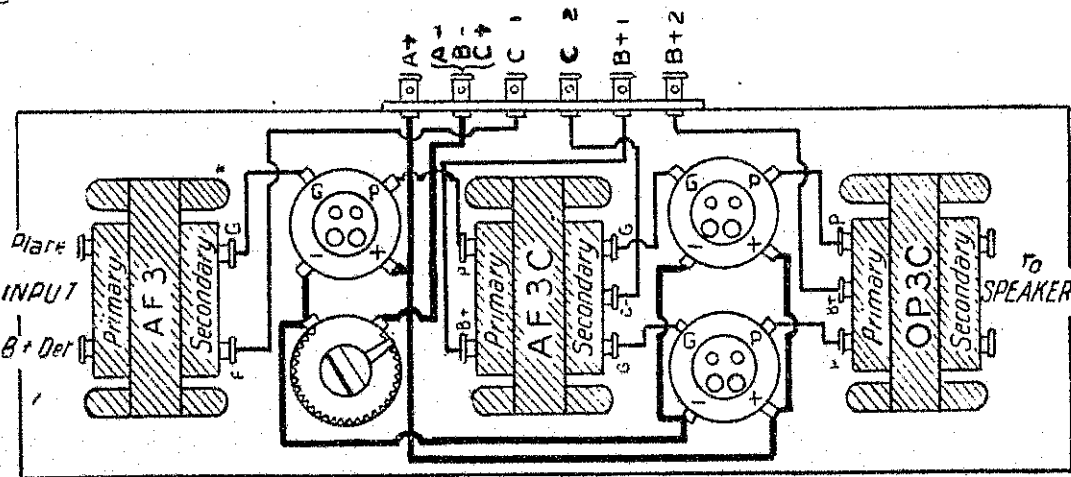
the terminals can be done by two nuts at the back of each binding post, although a soldering lug and a small touch of solder makes a far more substantial job.

By referring to the diagram it is quite a simple matter to follow the wiring. A point to point connecting scheme will, however, make any possibility of error very small. The filament wiring should be completed first. Join the second to the left hand terminal at the back, marked A—B—C+, to the right hand terminal on the rheostat.

The wire is cut to length, and a length of insulating sleeving slipped

terminals marked plate on the primary side of the last output transformer. This completes the construction of the amplifier, and it is all ready to connect to the batteries and have a trial run on the local station as received in a crystal receiver.

This amplifier, it may be added, will give good distortionless volume when used in conjunction with any of the numerous gramophone pick-ups available. Join the pick-up with necessary volume control to the input side of the amplifier. Providing the speaker will reproduce faithfully, then it will be astonishing to hear notes during a piece of music that were never heard before



Amplifier with Push-Pull Second Stage

over before the terminals are tightened up. The same procedure is necessary with all the wiring, and even if two wires touch, there is no fear of a short circuit. The left hand terminal of rheostat is connected to one filament terminal of each socket. The remaining three filament terminals are connected together by one piece of wire which also is run to the first terminal on the strip on the left. This completes the filament wiring.

The third terminal marked C—1 runs direct to terminal marked C—1 bias or F— on the first transformer. In the same way C—2 is connected to the centre tap on the secondary side of the second transformer. The fifth terminal marked B+1 is connected to

on the record as played on the ordinary gramophone.

Either two, four or six-volt valves can be used in this amplifier, and below is a table showing the recommended grid bias and plate voltage for the numerous valves on the market. If ninety volts alone is to be used, then B+1 and B+2 should be joined together and run to B+90. Grid bias must always be used with this amplifier.

THE Munich station relays a complete opera at least once every week throughout the nine-and-a-half months during which the opera season lasts.

## The Effect of Direction

### Important Considerations in Erecting the Aerial

MANY a wireless listener is quite unable to select from a number of possible positions the most favourable one in which to suspend the aerial. For many town and suburban dwellers it is a case of erecting an aerial in a limited or restricted position or not at all.

At the same time the more fortunate amateur will generally find that there exists around his residence several possible positions in which an aerial can be erected.

There is no doubt that direction has a great deal to do with reception, and in considering the qualities of different outdoor types it will be found that there are merely two, the L and the T.

#### The L Type.

THE ever-popular L type—that is, with a lead-in at one end—attains directional properties in consequence of the fact that the “fall” ends of the transmitted radio waves tend to travel through space more easily than they do at lower levels.

Therefore at distances of several miles from a broadcasting station the upper portions of the waves are slightly in advance of the lower parts. The waves, in fact, bend outwards, roughly in the shape of an inverted L.

The ideal state of affairs would obtain when the L shape of the waves coincided with the L shape of the aerial. This, however, is never attained, there being only a tendency to do so.

From these facts it becomes evident that the inverted L type will always receive best when it points in the direction in which the waves are coming, that is, when the lead-in of the aerial is taken from the end nearest the broadcasting station.

This type of aerial, which points at an angle away from the direction of travel waves, is less effective in directional properties, its effectiveness decreasing as the angle which the aerial subtends to the direction of the waves increases. Thus it will be seen that an inverted L type aerial which runs exactly at right angles to the direction of travel of the radio waves is the least efficient of any, so far as directional properties go.

#### The T Type.

COMING now to the T type aerial, which is decidedly less popular than the former type, it will be apparent upon reflection that a T type aerial really consists of two inverted L type aerials combined together. Thus an aerial of this nature cannot be as directional in properties as a small inverted L-aerial can. A T type aerial is directional in two opposite directions at the same time. Thus if the T-aerial runs due north and south it will receive most efficiently stations which are situated at those points of the compass.

If, on the other hand, the aerial runs from east to west, the northern and southern stations will come in least efficiently.

The directional properties of an overhead aerial tend to increase as the proportion of the length of the downward lead to the horizontal portion of the aerial is increased (that is the higher and shorter the aerial), and in some instances this effect can be very marked, especially in the reception of distant stations.

#### Other Considerations.

NATURALLY at very close ranges to a broadcasting station the lie of

## Why Buy Expensive Valves?

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**Economical OSRAM**

**THOS. BALLINGER & CO., Ltd.**

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“Where the QUALITY Goods are Sold”





Wellington, for 18s. 9d., postage 3d. This counts in either direction, and registers up to 10,000, showing clear figures which are arranged on drums in the usual way. A knob is provided, one revolution of which sets the counter at zero. It was decided to adapt this counter to the winder in such a way that it might instantly be removed at any time for other uses. This is effected as follows:—A brass pinion like that at B is secured by its set-screw and soldered to end of spindle. Then a piece of 3-8in. (outside) brass tube is sawn off 1 1-8in. long. One end of this is cut with acute V-shaped serrations all round, first with a triangular file, then deepened with a hack-saw. The idea of this is to engage at any point with a small pin in the side of the counter spindle. The plain end of this tube is now soldered to the brass pinion, centring it correctly. Fig. 2 shows this. Now take a strip of metal—tin will do—5 1/2in. long, and width just less than the counter. Turn up 1/4in. at X and notch to clear spindle. Put counter in place and

solder piece at back with notch to clear setting knob. Now take a block of wood 7-8in. high, 2 1/2in. long, and width of counter. This is slotted on top with two V's meeting in the centre, to fit a 5-16 square lever L, which is pivoted on a block at back. The block is attached to the tin strip by small screws from underneath, well sunk to give a flush surface. Two strips 3-8 square are now screwed to the platform, and between these the counter, on its holder, will slide. By pushing the lever to the left, the counter is disengaged from the spindle.

All that now remains is to take a 3-8 in. strip of 22's brass about 3 1/2in. long, and bend as shown in diagram 3. When the counter is engaged the lever drops into A and is held, but when the counter is disengaged the lever is raised slightly and rests on B.

The 1 1/2in. perforated meccano wheels are handy to slip on the spindle, one each side of a spool, to which they may be attached by screws. Larger formers for tuning coils may be held by larger flanges attached to these wheels.

safe method of use is to crack the glass of the bulb, which allows air to enter, and greatly lowers the fusing point of the filament. The use of a fine strip of lead tinfoil is cheap and very reliable as a protective fuse. It is wiser to have some kind of fuse in B negative than risk handing out the price of three or four re-place valves.

#### Regulations Concerning Mains Connections.

A LONDON radio journal of recent date contains new regulations specially framed to cover the use of wireless apparatus connected to the mains. The chief provisions are protection of all terminals from accidental contact, metal cases connected

to earth, fuses on both poles of input, earthing of certain receivers only through high-test condensers. All "mains" transformers to be double-wound (which means no auto-transformers), adequate insulation of 1000 volts a.c. test between windings, and high insulation from the mains input terminals.

#### Care of A Batteries.

IT is important for long battery life to re-charge when the battery is 80 per cent. run down. Always keeping a batter "well up" means long life. If an accidental "short" occurs it will not be harmful if the temperature does not exceed 100 to 110 deg. F., and if the battery is put on charge at once.

## Glossary of Wireless Terms

This instalment concludes the glossary of wireless terms quoted from the "Listener's Guide."

**WAVE-LENGTH.**—Although a station is known by a designated wavelength it actually uses more than one. For instance we speak of a wavelength of 371 metres; but that is the mean or principal one of a group or band of wavelengths actually used. No broadcasting station can transmit on one wavelength. The tuning equipment of the transmitter must be adjusted to permit of all or nearly all the frequencies employed in musical sounds to be transmitted. That means that the radiated energy of a station must swing at least 5000 cycles above and 5000 cycles below the central frequency of the band. There is a definite and fixed relation between frequency and wavelength; the frequency is the number of cycles in a second or the number of times the alternating or vibrating energy of the system varies in a second. Thus if the alternations, vibrations or oscillations in a second amount to 50 as in electric light systems, or 600,000 as in a wireless transmitter, the frequency is known as 50 cycles per second or 600,000 cycles per second respectively. In the latter case the inconveniently long number is shortened to 600 kilocycles (or 600 K.C.)—kilocycles meaning "thousands of cycles."

The wavelength is the distance between corresponding points on two adjacent cycles of change or waves—the crests of the waves for example. As the velocity of radiation is constant at about 300,000,000 metres per second, the wave-length can be ascertained by dividing the frequency into the velocity. Likewise, if the wavelength is known the frequency can be calculated by dividing the wavelength into the velocity. The frequency or wavelength of a transmitter can be measured by an instrument called a wave-meter. Such an instrument called a

meter. Such an instrument is a very important item of equipment at every station so that the engineers may observe frequently if their transmissions are on the correct wavelength.

Therefore: (1) Wavelength equals velocity divided by frequency.

(2) Frequency equals velocity divided by wavelength.

For example, to ascertain the frequency of a wave-length of 400 metres, frequency equals 300,000,000/400; results, 750,000 per second.

**WAVE-METER.**—A calibrated tuned circuit which radiates, either by means of a buzzer or an oscillating valve (known respectively as a Buzzer, Valve-meter and Heterodyne Wave-meter) oscillations of a known frequency or wavelength. When set in action at a predetermined frequency, the receiving set may be tuned to that frequency, merely by adjustment to receive the oscillations of a wave-meter. On the other hand the wave-meter may be used to pick up signals by being placed in close proximity to a receiver and under these conditions the wavelength of the received signals may be measured.

**WAVE-TRAP.**—An alternative term for an interference eliminator, commonly employed for eliminating interference from a "local" station. The trap is adjusted to the frequency of the signals it is desired to tune out, and absorbs them by by-passing them to earth so that the desired signals can be received without interference from transmissions on a close wavelength. A slight loss of signal strength may result if the design of the wave-trap is such that a nearby powerful transmitter is to be cut out. For ordinary purposes of clearing up selectivity a well-designed wave-trap is a very satisfactory piece of apparatus.

#### Electric Fittings for Speaker Extensions.

WHERE an output filter or transformer follows the receiver and polarity of connection to the speaker is immaterial, electric light fittings form a very handy system for connecting up speaker leads and extensions, and for the latter ordinary lighting extensions may be pressed into use at any time. There is one point to note, which is that the lamp socket should be attached to the speaker cord, so that it is impossible for anybody to

connect the speaker to the lighting system "just to see what it would do." An adapter plug with short leads connects to the set. Extensions or speakers are then rapidly connected with minimum effort.

#### Fuses for Filament Protection.

WITH the low consumption filament of many modern valves the use of a small torch bulb as a protective fuse in the B negative lead is not safe, owing to the relatively high consumption of the bulb's filament. A

## RADIO DIRECTORY

### What to Buy and Where

#### AUCKLAND

- ALTONA & HAMMARLUND-ROBERTS SETS.** Johns, Ltd.  
Chancery Street, Auckland.
- ATWATER-KENT RADIO** .. Frank Wiseman, Ltd.  
170-172 Queen Street, Auckland.
- BREMER-TULLY RADIO** .. Superadio, Ltd.,  
147 Queen Street, Auckland.
- BURGESS RADIO BATTERIES,** All Radio Dealers.
- FEDERAL, MOHAWK, GLOBE** Federal Radio House,  
8 Darby Street, Auckland.
- FERRANTI RADIO COMPONENTS** .. A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.
- GREBE RADIO** .. Howie's,  
Dilworth Building, Custom st., Auckland.
- MULLARD VALVES** .. All Radio Dealers.
- PREST-O-LITE. Car and Radio Battery Service** .. L. J. Purdie & Co., Ltd.  
97 Dixon Street, Wellington.
- RADIOLA RECEIVERS and Expert Radiola Service.** Farmers' Trading Co., Ltd.,  
Hobson Street, Auckland.
- T.C.C. CONDENSERS** .. A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.

#### COUNTRY TOWNS

- ANCHORADIO, BREMER-TULLY, RADIOLA, BROWNING-DRAKE, AND ATWATER-KENT RADIO** Radio House,  
Hamilton. G. S. Anchor, Manager.
- BROWNING-DRAKE SALES AND SERVICE** .. J. H. Sinclair,  
Otane, H.B.
- CROSLEY ELECTRICAL AND BATTERY MODELS** .. The Forrest-Crosley Radio Co., Ltd. Cuba Street, Palmerston North.
- GAROD, CROSLEY, RADIO AND ACCESSORIES** .. The Hector Jones Electrical Co.  
King and Queen Streets, Hastings.
- GREBE, CROSLEY AND RADIOLA SERVICE** .. E. Dixon and Co., Ltd.,  
Hawera.
- RADIOLA DEALER AND SERVICE** .. G. C. Carrad.  
140 The Avenue, Wanganui.
- PHILIPS VALVES AND APPARATUS** All Good Radio Dealers.

CITY listeners have a good deal to contend with in the form of power-line leakages and interference from other electrical sources. In one of Wellington's suburbs listeners are perturbed over interference from a cinema theatre, and good "outside" reception is not possible within a considerable radius of the theatre until the show closes down. It is possible, however, to greatly reduce, if not completely eliminate, the trouble at its source if a competent man is put on to the job.

SOME seaside localities around Wellington are proving bad for long-distance reception owing to the poor-ness of the "earth." One Lyall Bay listener has driven a fifteen-foot copper tube into the sandy soil of his section, and has poured gallons of water down the tube, but the water apparently runs away as quickly as it is poured down. The section is too high above sea-level to strike water, although the site is really not a high one. The water-pipe through passing through sand is equally unsatisfactory. The said listener now proposes to pour a chemical solution down the tube to form an artificial "earth."

CONDITIONS for long-distance reception around Wellington have been most irregular since the return flight of the Southern Cross. There have been some exceptionally good

nights, but they have been few and far between. Static has raged heavily on many nights, and the overseas stations have been frequently weak. Still, when summer sets in properly quite probably some excellent long-distance reception will be available, with a minimum of static. Some of the best periods of DX reception have been experienced during the New Zealand summer months.

THE advent of winter in the Northern Hemisphere is commencing to have an unusual effect in bringing in the Japanese and Californian stations. Listeners residing just outside the inner city area of Wellington are finding some of the overseas stations coming in better than ever on favourable nights. The area close to the city is somewhat screened by the surrounding high lands, and three listeners residing in that area are unable to obtain the long-distance results available to those located a mile or two further out.

WELLINGTON listeners have noticed a distinct difference in the reception of Australian stations during the early evening since the introduction of the half-hour's "daylight

saving" in the Dominion, and the lengthening out of the days. One has to wait now well into the night to obtain the peak of reception from across the Tasman Sea.

STATION 3AR, Melbourne, has been specialising in gramophone recitals, which have become thoroughly popular in Australia. A prize was recently awarded for the following letter on the subject:—

"A word in appreciation of the gramophone recital now being broadcast from 3AR each evening. This service was long overdue, however. In spite of Press criticism of the broadcasting of records from A class stations, there is no doubt that many thousands of listeners will hail with delight this extension of the field of entertainment, especially those who were not able to hear the B class stations, or, at most, only indifferently. The modern gramophone record is a masterpiece of ingenuity, enabling the A class stations to give listeners the most faultless rendering of those great masters who might otherwise never be heard."

THE most consistent performer so far as Wellington listeners are concerned, is 2BL, Sydney, which is easily the loudest of the Australian stations, though, perhaps a trifle inferior to 2FC, Sydney, in tone. That one-time regular visitor, 5CL, Adelaide, is not coming in with anything like its punch of two years ago. 7ZL, Hobart, has also gone to the pack. The greatest improvement among the Australian stations as compared with other days is the reception of 3AR, Melbourne. This station's recent overhaul has put it well on the map for Wellington listeners.

WELLINGTON listeners in the past have not entirely appreciated the presence of a warship in port, and the arrival of H.M.S. Dunedin last week on a month's visit has not aroused any enthusiasm among listeners. In past years a good deal of unnecessary interference to broadcast listening was caused by radio operators on visiting cruisers sending out messages during broadcasting hours. The last straw was when one of our New Zealand cruisers was detected sending out cricket scores to another cruiser, right in the middle of a local broadcast programme, which was chopped to pieces while the "brass pounder" was hammering away at his morse. Protests were sent in to the P. and T. Department, and thence forth the cruiser's morse was silent until after 10 p.m.

THESE New Zealand cruisers have exceedingly powerful transmitters, and when they are berthed at Wellington their morse blots out reception by listeners for two or three miles around. It must be remembered that not a multi-valve set is sold in New Zealand unless it is guaranteed to pick up the Australian stations, and it is unfair of any cruiser to interfere with the pleasure of hundreds of licensees by sending out unnecessary morse messages after 6 p.m. and before midnight.

A FEW Wellington listeners are inquiring about the possibility of obtaining apparatus to pick up the pictures transmitted by some of the American stations. Long-distance picture re-

ception is not likely to be practicable for some time to come yet. As far as results are concerned, fairly good pictures have been received in U.S.A. with amateur apparatus up to distances of 700 miles, although it is readily admitted by those interested in this work that the transmission of pictures is essentially a short-range proposition.

Wellington listeners who sit up after 10.30 p.m. should tap the 300-metre mark occasionally as a new up-to-date broadcast station on that wave-length is to commence operating in Hong-Kong before long, using the call letters GOW. It is proposed to relay programmes sent out from England by the short-wave station 5SW. "Switch" would be pleased to hear from any listener who picks up GOW. Maybe Claude P. Grey, of Shannon, at his famous listening post, will let us know when the Hong-Kong station "arrives."

THE electro-dynamic cone loudspeaker, which first came to us as a costly bit of furniture, and is undoubtedly, so far, the last word on speakers, is about to make a big bid for popularity in Wellington. A local company is now importing the electro-dynamic units, without the valve amplifiers, which are being retailed at a price of only a fraction of the figure asked for the complete article.

THE proprietor of a tea-room in the centre of Wellington informed "Switch" the other day that he is launching out on equipment to give his customers the very best entertainment by radio. He has an a.c. electric receiving set to which he is about to add a power pack to drive two very large cone loudspeakers with most natural tone. He proposes to put on 2YA, Wellington, and when that station is off the air he will substitute a gramophone with an electric pick-up. Well, this is certainly enterprise, and, incidentally, a good advertisement for radio.

OCCASIONALLY Wellington owners of a.c. electric sets have lost a detector valve of the "heater" type through burning out. This is almost invariably due to line voltage fluctuations. An American exchange reports: "There is no excuse now for burning out AC detector tubes. No less than a half-dozen good voltage regulators and twice that number of series resistors are on the market at a reasonable price. Their function, of course, is to reduce the line voltage, where it is excessively high, before the voltage reaches the radio receiver." A first-class voltage regulator will shortly be on the New Zealand market at a reasonable price.

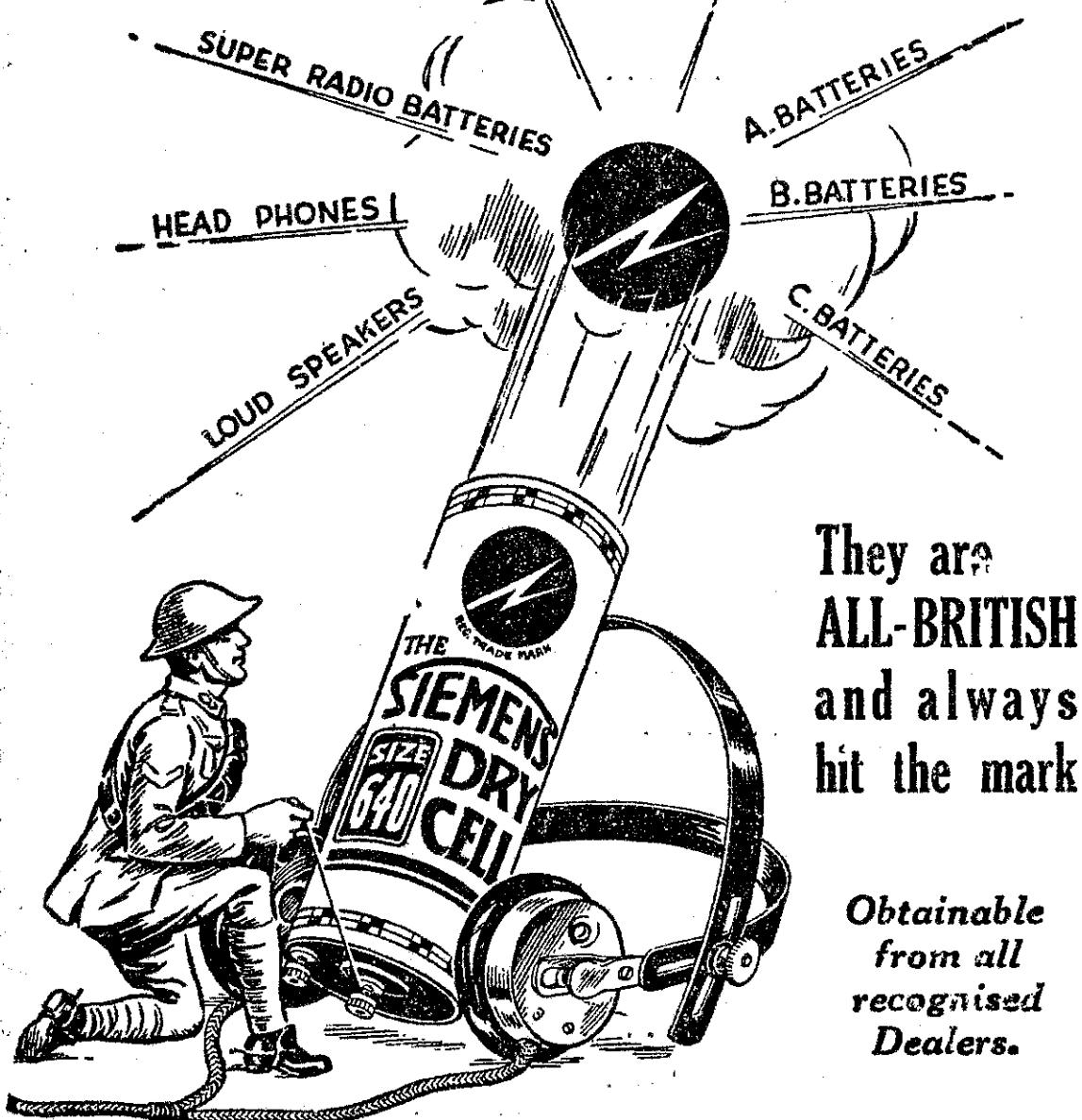
THERE is strong public sentiment that Mr. McWilliams, the New Zealand radio operator who acquitted himself so admirably on the Southern Cross during her return flight to Australia, should have his services rewarded by a public subscription. It was through Mr. McWilliams that the wonderfully interesting broadcast of the progress of the aeroplane was made possible. This intrepid operator did not participate in the division of the £2000 the New Zealand Government grant to the flyers.

THE radio station at Lille, France, recently provided a novel programme for listeners by broadcasting a fireworks display and requesting fans to close their eyes and imagine the spectacle.

## Notes and Comments

By "Switch"

# SIEMENS RADIO ACCESSORIES



N.Z. Agents: CORY-WRIGHT & SALMON,  
Engineers, Wellington and Auckland.



## New Radio Features

Notes by "Observer."

WHILE nothing revolutionary has taken place, nor is likely to take place in the immediate future, there are fresh modifications and developments creeping into our system.

In strolling casually round town when all radio dealers are demonstrating, many new and pleasing features are to be seen. Probably the most momentous feature is the appearance of the popularly-priced dynamic cone speaker, to which reference has already been made. More than one dealer has introduced this speaker, and on their first appearance good-sized crowds congregated round the shop doors. Many expressed admiration of the beautiful effect produced by a fully reproduced base—the music was characterised by tone and colour.

### Browning Drake Unit.

A NEW Browning Drake, single drum dial unit, has appeared. It is prepared so that when mounted a minimum of controls (3) will appear on the panel. The coils are slightly smaller, but according to accurate tests, are not appreciably different from the standard three-inch coils. A new feature has been introduced. What is comparable to a tickler to the aerial coil is used to compensate for the ganged condensers. By this means the set does not lose one iota of sensitivity. The coils are widely spaced and so spaced as to make shielding unnecessary.

This new unit makes it a comparatively easy matter to add a screen grid stage. Mr. C. C. Fear (Messrs. Fear and Co., Wellington), an authority on the circuit, states that this unit is easily built in to a circuit and combined with a s.g. stage of R.F. makes a receiver which for efficiency and appearance the home constructor would find difficult to surpass.

### A Shielded Short-waver.

ANOTHER very fine combination is on view. A completely shielded short-wave set, with coils that can be changed for broadcast reception, promises remarkable efficiency. A switching arrangement makes it possible to obtain music at any time through a gramophone pick-up also embodied. The set is "fool proof," all wiring being concealed by a sub-panel. This very pleasing model, encased in an aluminium cabinet is finished in duco. The designer is Mr. S. McCarthy ("Macks" Radio Company).

### One-Stage Amplifier.

THE beginner will find many efficient one-valve amplifiers on the market. Many of these are very inexpensive. One particular dealer has built a complete outfit into a very neat cabinet and supplies a well-known make of speaker, yet very reasonably priced.

## Railway Parcels Rates

Continuing its policy of providing the most attractive service for its customers the Railway Department announces that from October 29 the extra charge of 25 per cent. on parcels for which the freight is not prepaid will not be enforced. Parcels consigned

"carriage forward" will be charged the same rate as prepaid parcels.

The use of freight stamps on prepaid parcels at present compulsory, will from the above date, be optional.

It is anticipated that these alterations will be much appreciated by the business community and will have the effect of popularising the already attractive railway parcels service.

## Auckland Notes

(By "Listener.")

LAST Wednesday's "Mystery Night" at 1YA aroused even more interest than its predecessor, and large numbers of listeners, even though they did not actually compete, showed themselves quite anxious to test their knowledge of music and performers. Such a night as the one given by 1YA is a fine demonstration of the educative influence which broadcasting is having on the realms of music. Undoubtedly the general public does not yet realise the full extent of this influence, but it is gradually coming to do so.

THE enthusiasm with which the local musical and dramatic committee is facing its tasks is displayed in the scope which it is now affording to local literary talent. This is being given the chance to delve into the new field of the radio play—a field which offers great scope. Too much publicity cannot be given to the competition, and it is to be hoped that Aucklanders will respond as enthusiastically in the submission of libretto suitable for the air. Plays with a real New Zealand atmosphere would arouse intense interest among listeners. Let us hope that Auckland soon has them—plenty of them.

DURING last week-end local set-owners were decidedly "up against it." Never, to the writer's knowledge, have atmospheric conditions been worse. Our small station, 1ZQ, was almost blanketed by static, it was torture to attempt to tune 2YA, and to hear Australia was an impossibility. The disturbance disappeared as quickly as it came, and on Tuesday and Wednesday evenings ideal conditions returned.

ENTHUSIASTS in radio development are eager to examine the automatic "S.O.S." alarms with which several steamers visiting the port are now equipped. Ship operators are invariably courteous to inquirers, and many an Auckland has had a demonstration of the working

of one of the latest piece of radio wizardry. Many are surprised to learn that the S.O.S. signal has been superseded by another, which the instrument handles unfailingly, and that our arch enemy, static, even takes a hand in raising false alarms by exactly duplicating the new-adopted signal.

THERE is a growing demand that politics, in homeopathic doses, should be on the air during the current campaign. Radio has been an outstanding agent in the Presidential campaign in America. In Australia it is being used extensively by party leaders, and everyone in Britain anticipates that next year's election will be fought largely over the air. Country listeners particularly would welcome brief radio addresses by representatives of each party, but, of course, the present regulation banning controversial matter stands in the way. The feeling exists, and it is growing, that the Government might waive the regulation, in no party spirit, but for the advantage of the large body of electors who would rather hear the real voice of the leaders than read their speeches in cold print. The suggestion may not be a feasible one with the brief time now available, but even if 2YA alone could be utilised, affairs political could be broadcast for the benefit of the whole Dominion.

TWO factors contributing to the grow of radio licenses in this district are the popularity of short-wave reception and the incorporation of the latest types of valves in high-efficiency sets. Local retail firms are finding a keen demand for screened-grid sets, and the assembly of these is becoming quite an important part of radio trade.

AS an aid to navigation in the frozen North, the Canadian Government is installing three powerful stations in the vicinity of Hudson Bay. They are to be equipped with direction finding equipment, so as to render service to planes operating within their range.

## Railway Trips to Franz Josef

### WORLD'S MOST BEAUTIFUL GLACIER

THE RIGHT HON. L. S. AMERY, one of the world's most distinguished mountaineers, said: "There is nothing in the World that I know of to compare with the striking contrast between the almost tropical verdure of the West Coast bush and the great Franz Josef descending right through it from the world of snow above."

### Specimen Return Rail and Motor Fares to Franz Josef.

From	1st Class	2nd Class
	£ s. d.	£ s. d.
AUCKLAND	14 5 0	11 6 2
PALMERSTON NORTH	9 1 6	7 15 6
WELLINGTON (Thorndon)	7 14 4	6 17 0
CHRISTCHURCH	7 12 6	6 15 10
TIMARU	9 2 8	7 16 4
DUNEDIN	11 2 6	9 3 6
INVERCARGILL	13 4 10	10 12 6

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Name

Address

## HARTLE & GRAY

British Radio Supplies,  
CUSTOMS STREET, AUCKLAND.

Mr. F. W. Sellens (Northland) writes:

A SHORT-WAVE broadcasting station has recently been erected in Copenhagen. This station belongs to one of the leading wireless papers in that city, and was built, and is operated entirely, by the technical staff of this periodical. Test transmissions are being carried out on a wave of 78.5 metres on Tuesdays, Thursdays, and Saturdays, between 11 a.m. and 1 p.m. New Zealand summer time. Reports are asked for to be sent to "Radio-posten," 10 Snaregade, Copenhagen K., or via RSGB—EDR.

It is also reported that the Norwegian Broadcasting Company "Kringhastingselskapet," will in a few weeks commence short-wave transmission on a wave-length of 30 metres from Bergen, Norway.

2ME, Sydney, during a talk to 2XAF, one evening recently, stated that AGB, Nauen, Germany, would be transmitting telephony on 26.3 metres about next February. 2ME were heard calling this German station last week and arranging a schedule for the following day.

I SPENT the last week-end in Christchurch, and was able for the first time to compare reception on short-waves in that city with Wellington. With the short-wave receiver owned by Mr. R. T. Stanton, Sydenham, it was possible to bring in stronger signals than is possible in Wellington, that is, using the same number of valves, detector, and two audio. In talking with an operator with knowledge of reception in both cities, he said that to listen in Christchurch was equal to another valve compared with Wellington. This, I should say, is about the difference, judging by results during my brief stay.

There has been plenty of static during the past week. 7LO, Nairobi, has been heard several times, but is seldom free from static and morse interference.

#### Saturday, October 20.

5SW was R7 at 7.30 a.m. Static very bad. 2XAD at 1.30 p.m., when first tuned in, was R2. This increased to R8 by 4 p.m., and remained at that till signing off at 5.3 p.m.

Mr. Al. Smith, the Democratic candidate, was speaking at Chicago till 3 p.m. This was heard from both 2XAD and KDKA. The band of the 131st Regiment were heard after the speech. The last hour was devoted to dance music from the Hotel St. Regis Roof Orchestra.

KDKA was not readable till about 2.30 p.m., when it was found they were broadcasting the same political talk as 2XAD. They afterwards relayed a programme from the Italian Room, William Penn Hotel. Strength R7 when signing off at 4.37 p.m.

PCJJ was held from 4 p.m. till 6

## Round the World on Short Wave

Notes of special value to short-wave enthusiasts are contributed weekly to the "Radio Record" by Mr. F. W. Sellens, Northland, Wellington. Observations from others are welcomed.

p.m., the maximum volume being R6. Static was very bad.

2AJ, Wellington, was the only amateur heard.

#### Sunday, October 21.

2BJ, Wellington, was heard in Christchurch at 2 p.m. at R6. 2XAF was quite good speaker strength from 4.30 p.m. till 5 p.m. with dance music. After this, a television test was carried out for the benefit of Canadian amateurs.

The announcer gave the names of the people to be "televised," some artists of WGY. He said the "lookers in" would see their faces "if they were lucky."

KDKA were heard, but were much weaker than usual.

6AG, Perth, came in well at good strength, as did RFM, but static was too bad for enjoyable reception.

#### Monday, October 22.

3LO, Melbourne, was good volume from 8-9 a.m., but was marred by static.

#### Tuesday, October 23.

At 9.50 p.m. 3ZK, Victoria, came in very good at R8, being 100 per cent. readable.

#### Wednesday, October 24.

PCJJ from 5 a.m. till 5.30 a.m. was at its best, being R8. After volume began to decrease, being R5-6 at 7.45 a.m. At 5.20 a.m. 7LO, Nairobi, at R4-5, was good. There was slight rapid fading. Static was not so bad as usual on this station, but morse interference was as bad as ever.

5SW started at 7 a.m. with Big Ben. A talk by a lady followed. The title of her address was not heard, but it was about women and work. At 8 p.m. 2XAF and 2ME were picked up, testing duplex telephony. The Australian station was the strongest at R9, 2XAF being about R8. The power of each station was stated to be about 18 kilowatts. 2ME told the Yank that they were going to broadcast "Australia's greatest horse race, the Melbourne Cup" on November 6, at 3 p.m., Sydney time, on this wave-length (28.5 metres). At 10.30 p.m. ANE, Java, 15.93 metres, joined in with talks to 2ME and some music. Strength R8. 7CW, Hobart, Tasmania, was testing.

#### Thursday, October 25.

5.30 a.m., 7LO, talk was heard at R4. Static was as loud.

PCLL was R7, transmitting gramophone records. Static very bad.

At 7 a.m. the Chelmsford station

opened up with "5SW, Chelmsford, now going over to London for the chimes of Big Ben and the programme of that station." The striking of the clock was followed with a talk by Sir Edward Crow.

3ZC, Christchurch, was testing on 50 metres during the evening.

6AG, Perth, on 32.5 metres, was good strength, but spoilt by morse.

ANE, Java, at R7-8, was very clear and steady with some musical items.

#### Friday, October 26.

PCJJ was excellent from 5.30 a.m. till 7.30 a.m. Strength from R8 to start, and R6 at 7.30 a.m. 5SW and 2XAD were chatting at 5.30 a.m. Only the English station could be heard. This test finished before 6 a.m. At 7 a.m. Big Ben was heard, followed by a talk by Lady — about country life.

At 7.25 a.m. TXAD was heard at R4 transmitting orchestral music. A station, probably KDKA on 25.4 metres, was also heard about 7.30 a.m. at R3 with rapid fading. 2ME at R8 and 2XAF at R7-8 were tuned in at 6.45 p.m. There was some static, which was very bad in Sydney, as 2ME were heard to say that it was hard to read 2XAF as static was maximum.

Later, ANE came into the conversation, calling both 2ME and 2XAF. The Java station on 15.93 metres was the only one free of static.

3QT, Victoria, just above 33 metres, was good at R5. 12.30 a.m. Big Ben striking the half-hour, followed by organ music without any announcement. R5.

#### Another Report.

Mr. J. D. O'Loughlin (Masterton) writes:—On Sunday, October 21, 2XAD was the loudest I have heard him for a long time. He was very steady and the programme enjoyable. The "Lucky Strike" cigarette people put over an hour of variety entertainment. At 5 p.m. a 40-minute television broadcast for Canadian listeners was commenced. A strong ripple was superimposed on the carrier. Amateurs heard included 3CM, 2AH, 2GA, 2BI, 2AK (?) and 2AB. 3LO was R8 on Monday morning. 2XAF and 2ME were testing on Monday night. Static was very bad. ANE was also working 2XAF, atmospherics being entirely absent on his wave.

PCJJ was very enjoyable on Wednesday and Friday at R8. 2ME and 2XAF were again testing on Wednesday at 7.45 p.m. 1AJ at R8 and 3AR at R9 were also on the air. PCLL and 7LO, Nairobi, were heard, but were spoilt by Morse. Two Australian amateurs, 2HC and 2GQ, Canberra, also came over well.

This evening—Friday—at 5.45 2XAF at 9 is calling 2ME and playing records.

#### Shortwave Time Signals

THE Dominion Astronomer (Dr. C. E. Adams) advises: "The following information has been received with reference to short-wave time signals:—  
(1) From the Hydrographer of the

Navy, Admiralty, London, announcing the establishment of a time signal from the Chelmsford (5SW) station on a wave-length of 24 metres, power 20 k.w. The signal is sent twice daily except Saturdays and Sundays from the Greenwich Observatory at 13h. and 21h. G.M.T.—one hour earlier during the period of British Summer Time. The signal consist of 6 dots of one second interval, the commencement of the final dot being the exact hour.

(2) From the United States Naval Observatory, Washington, D.C., on 74.7 metres at 03h. and 17h. G.M.T. and on 37.4 metres at 03h., 08h. and 17h. G.M.T. Call sign NAA. The signal is the usual American one as described in (3) below.

(3) From the Elgin Observatory, Elgin National Watch Company, Elgin, Illinois, United States. Call sign WNBT on a wave-length of 33.5 metres. The signals are sent in accordance with the following programme:—

0 hrs. G.M.T. daily, except Saturday and Sunday.

6 hrs. G.M.T. daily.

14 hrs. G.M.T. daily, except Sunday.

16 hrs. G.M.T. daily, except Sunday.

18 hrs. G.M.T. daily, except Saturday and Sunday.

20 hrs. G.M.T. daily, except Saturday and Sunday.

22 hrs. G.M.T. daily, except Saturday and Sunday.

The signals at 06h. G.M.T. has been frequently heard at the Dominion Observatory and elsewhere in New Zealand. The signals begin in each case exactly 5 minutes before the hour stated in the table and consists of a regular series of dots every second with the twenty-ninth, fifty-fifth, fifty-sixth, fifty-seventh, fifty-eighth and fifty-ninth omitted.

I shall be obliged any of your readers who hear these signals would kindly report to the Observatory.

WIDESPREAD interest has been created by a system of vocal contact maintained by Vancouver with coastal vessels operating on that coast. From an experiment attempted in 1919 this means of communication has become an effective and reliable means of communication between owners and their ships or tugs as is usually the case. The sets are constructed in such a manner to make tuning unnecessary. The transmitting station calls up the tug in question by name and anyone near the speaker or 'phones is able to take the message and to reply. Certified government operators are unnecessary. Both land and sea-tugs have a daylight range of 60 miles and under favourable conditions 140 miles. It is considered that the system has great possibilities, and it should be possible to maintain telephone communication with ocean-going liners in the near future.

IN Des Moines, Iowa, music from a local broadcasting station was emitted by the signal box indicating the floor numbers in the car of an elevator.

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