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SAFETY AT SEA

Another means by which radio and its allied sciences are ensuring the safety of human life

WIRELESS first came to its own as a means for furthering the safety of life at sea. It was then its most important application. It is its most important application to-day. The uttermost parts of the earth were already linked together by the telegraph, but by wireless alone has the earth been linked to the sea.

Though the importance of wireless from the shipping point of view was immediately grasped by the English people, it did not receive a really striking confirmation until July, 1909, when the liner "Republic" collided with the "Florida" in a thick fog on the high seas. The "Republic" was sinking, and plunged in darkness, the wireless cabin was splintered; but the apparatus was still workable, and the operator set an example which has been followed without a break by ships' wireless operators ever since. He stuck to his post, and by his calls for help the whole of the passengers and crew were saved. The next day that operator's name was known and honoured all over the world. His name was Jack Binns.

The next startling confirmation was when the "Titanic," with some 3000 people on board, struck an iceberg on her maiden voyage across the Atlantic. Her signals of distress were picked up by several ships which raced to the rescue, but when they arrived the "Titanic" had sunk, and they were only able to save some 900 persons. Without wireless, all would have been lost.

The International Convention.

IN the following year an International Conference on The Safety of Life at Sea was held in London. An International Convention was signed, but unfortunately, owing to the outbreak of the war, it was never ratified by any of the Governments represented at the conference. Immediately after the war, however, the British Government issued regulations which were on the general lines proposed, and other governments followed suit with regulations which, on the whole, were less stringent than those laid down for British ships.

Another International Conference was held in London last year, and a new convention signed which, when ratified, as we may confidently expect it will be this time, will come into force in July, 1931. It is a long document, but, broadly speaking, its principal provisions are on the lines of the regulations already in force, and where they differ they are better from the point of view of the safety of life at sea.

Ships' Installations.

FOR the last ten years it has been laid down that in general all British passenger ships, irrespective of size, and all cargo ships of 1600 tons and upwards, must be fitted with wireless telegraphy. Exceptions are made as regards certain ships, such as short voyage ships and ships of primitive build, dhows, junks, and the like. This rule is now accepted internationally in the new Convention, as are the regulations which are in force regarding the minimum technical requirements of the wireless sets installed in ships.

The main ship's transmitter must have a normal range of 100 nautical miles, that is to say, it must be capable of transmitting clearly perceptible signals from ship to ship, over a range of at least 100 nautical miles, under normal conditions and circumstances, the receiver being assumed to be one employing a rectifier of the crystal type without amplification.

There must, too, be an emergency transmitter, and both transmitters must have a note frequency of at least 100. The emergency transmitter must be placed as high above the water line as practicable, in a position of the greatest possible safety, and must be provided with a source of energy independent of the main propelling power of the ship and of the main electricity system. It must be capable of being put in operation rapidly, and of working for at least six consecutive hours. The range of the emergency installation must be at least 80 nautical miles for ships required to keep continuous watch, and at least 50 for all other ships, and whilst the ship is at sea the source of power must be maintained at its full efficiency.

The ship's receiver must be capable of maintaining reception in emergency by means of a rectifier of the crystal type, and must be able to permit of the reception of the waves laid down for the transmission of time signals and meteorological messages.

—Continued on page 2.

Safety at Sea

(Continued from front page.)

Directional Receivers.

WITHIN two years from the date on which the Convention comes into force every passenger ship must be equipped also with directional receiving apparatus. This is the first time that such apparatus has been made compulsory fitting. All our large passenger ships are already fitted; in fact about 20 per cent. of our ships fitted with wireless are equipped with this apparatus, so that the new regulation will not affect us much, but it is most important from the international point of view.

Directional receiving apparatus in a ship enables the operator to obtain the bearing of the ship from any other ship or any shore station which is transmitting wireless signals, so that its importance from the safety point of view is obvious. It is of great assistance to navigation in foggy weather and has frequently enabled a ship in distress to be located by another ship which is coming to the rescue. When more ships are fitted it will also, no doubt, prove of help in assisting ships to avoid collisions with other ships in a fog.

It is hoped that Mr. Baird's noctovision system will prove of great value in this connection later on. With this system a ship will be able to direct a beam of infra-red rays in much the same way as a searchlight, and be able to see, on the screen of its noctovision receiver, objects in the path of the rays.

Wireless Beacons.

DURING the last few years a number of wireless beacons have been established around our coasts, and those of other maritime countries. More than 100 are now working and about half of these are in the United States. These beacons emit their call signs automatically at specified times, so that a ship fitted with a directional receiver can obtain a bearing on a beacon station up to a range of about 50 miles. A few beacons emit a revolving beam, which enables a ship to obtain a bearing with its normal wireless receiver, and some others emit a submarine sound signal simultaneously with the wireless signal, so that a ship may obtain not only its bearing but also its distance from the beacon.

There are, too, a large number of coast stations which are fitted with directional receivers, by which means they can obtain the bearing of a ship, and pass on the information to the ship by wireless.

The S O S.

THE most important application of wireless in connection with the safety of life at sea is its use for the S O S signal, which is broadcast by a ship only when the ship itself is in danger. The signal consists of the three letters sent as one sign, and repeated three times. This is followed by the distress message giving the ship's position and particulars of the case of distress. Distress work is carried out on the 600-metre wave on which all ships are normally keeping watch, and all other signalling ceases as soon as the distress signal is heard. The coast stations in this country deal with nearly 100 distress cases every year.

The station which deals with the distress call keeps the Coast Guards, the Naval Authorities and Lloyds in touch with the situation, so that all possible means may be taken in providing assistance from the shore.

The new Safety Convention recommends that the distress signal should normally be preceded by the Alarm Signal, which is used to put into operation the auto-alarm receiving apparatus in ships in the vicinity. This apparatus is arranged to ring bells in the ship for the purpose of calling the operator to the wireless cabin whenever the alarm signal is received. Auto-alarms have been in use in many British ships for the last two years, but other countries were a little sceptical of their practical utility, and the fact that this apparatus was recognised internationally at the recent Convention ensures the more general adoption of the apparatus throughout the world. The Alarm Signal consists of a series of twelve dashes sent in one minute, the duration of each dash being four seconds, and the duration of the space between dashes one second.

Weather bulletins, gale warnings and navigational warnings are now broadcast from the majority of coastal stations the world over; and these reports are the only use made of wireless telephony in connection with the safety of life at sea. It is interesting to note that trials are now being made in England and other countries with the transmission of photo-telegraphy of weather charts for the use of ships at sea.

In conclusion, there can be no doubt that the advent of wireless has done more towards furthering the safety of life at sea than any other invention the steam engine.

"Talkie" Production

Success Due to Radio

THE following tribute to the part played by radio in the production of the talking kinematograph film formed the leading article in a recent issue of "Science and Invention": One by one, and in large groups, the motion picture houses are going "talky." Within a few months we have witnessed a complete recasting of the motion picture industry. This upheaval has caused many stars to lose their brilliance and has made more lustrous some other lucky individuals who up to now, never had a chance.

Most of us know little and care less about the mechanics of this change, but it is a most interesting story and is just another indication of the rapidity with which our business methods may be completely upset and rebuilt. New actors, new directors, new continuity writers, new camera men and new technique are but a few of the changes the talkies have brought us.

From the standpoint of applied science most of us can learn a great deal from the talkies. When the recording is done by an electrical reproducing method employing wax, great care must be taken in the preparation of the wax to hold what is termed "surplus noise" down to the lowest possible scale. Where the voice and music recording is made a part of the film there is a great opportunity for chemists to exert their skill in the proper compounding of those chemicals which form the film emulsion, sensitive to the light ray, as well as in the production of the extremely delicate light-sensitive cells which are used in converting the rapidly changing sound frequencies into the light frequencies which are recorded on the film. One of the least understood among the electrical phenomena is high-frequency alternating current. This form of current is, to a large extent, the current used in the talkies. The intricate mechanisms providing synchronism between the electrical and mechanical units, which comprise the recording and reproducing units for the talkies, require an accuracy of manufacture usually confined to such skilled arts as watch manufacture.

The application of a great many of the fundamentals found in the commercial talkies has come directly from the large radio laboratories. This is indeed a fertile field for experimentation, and it is very likely that a great many home talking movie outfits will be used by many experimenters for the development of ideas which will further improve the commercial product.

In spite of the giant strides that have been made in the last year, there is still plenty of room for improvement in colour motion picture photography, recording equipment, and the proper application af all these ideas to fit the particular acoustic properties of the theatres to the talking movie systems.

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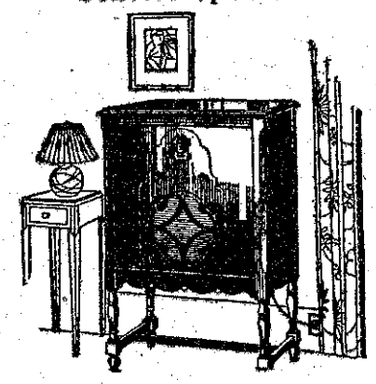
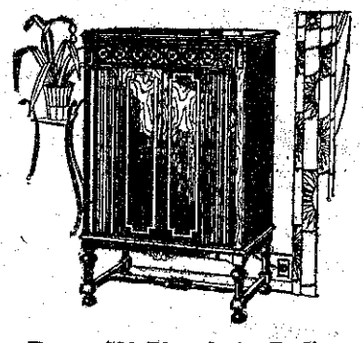


Rogers 530 Lowboy



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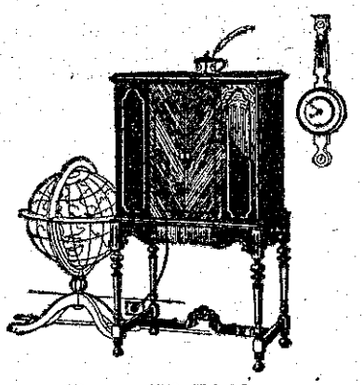

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Instruments of the Orchestra

Brass and Drums

The accompanying article from the pen of Mr. C. Whitaker-Wilson (published originally in the "Wireless Magazine") is one that will appeal to those who wish to interpret the orchestral and band music they hear over the air. The author is a prominent English orchestral conductor.

THE first, and one of the most important, is the horn. This is an instrument of considerable antiquity. Lip-blown instruments have been used in every age from the primitive days of man onwards. It has always been necessary, even in the very earliest times, to have some means of summoning men and women together.

Horns of every imaginable description have been used in war, and a large number of varieties in peaceful pursuits also. The hunting horn is undoubtedly the immediate precursor of what we now call the French horn.

Two forms of the horn have been in common use for musical purposes—the natural hand-horn, sometimes called the valve or ventil-horn, sometimes called the chromatic horn. The term chromatic may be appropriate for the modern ventil-horn; the hand-horn was anything but chromatic. The number of notes which it could produce was limited, and such notes really sprang from a foundation note.

The player could raise the lowest note of the horn to higher notes by altering the position of his fingers, which were inserted in the bell.

This instrument is still in use, but most players prefer the ventil-horn, which makes all notes possible and is more satisfactory in every way.

The introduction of the ventil-horn revolutionised both the actual playing of the instrument and the composing for it. In the old days it was only possible to compose simple passages for the horn; long and sustained notes were preferred; but now it is possible to write almost anything for this beautiful instrument.

Brass and Drums.

Horns are used in pairs; most orchestras have two players, but the larger orchestras have four. Tschaikovsky and Wagner nearly always employed four horns in their scores. Perhaps, of all the brass instruments, the horn is the most effective on the wireless, because its tone is soft and round.

To look at, it is nothing more than a long tube coiled in a circular form. The tube near the mouthpiece is not more than a quarter of an inch in diameter; at the bell end it is eleven inches at least.

From the point of view of scoring, the horn is another of the transposing instruments. At one time crooks for nearly every key were carried by the players; recently it has been the custom to use only the F crook. So that in writing for horns in F the horn part is written in the key a fifth above that of the whole piece; no key signature is employed, but sharps and flats are put in where required.

Distinctive Trumpet.

AT one time there was not a very great difference between the tone of the trumpet (which we must now consider) and that of the horn; the Alpine horn, for instance, was very like a trumpet in many respects. But all that has passed now, and the trumpet is a very distinctive instrument. Just as there has been a natural horn, so there has been a natural trumpet, but the modern valve-trumpet has long since replaced the older kind so far as orchestras are concerned.

The trumpet is a very brilliant instrument; this is probably due to the cylindrical nature of the tube.

In scoring for the trumpet it should be remembered that it is a transposing instrument. Although it is not so very long since most players carried crooks for the various keys, it has become the custom to treat the instrument like a clarinet and to have it played in either B flat or A natural. All this transposing makes an orchestral score very complicated, and many have been the students of orchestration who have heaved heavy sighs over these complications. Yet it is extraordinary how quickly one gets used to looking up a score and transposing mentally as one does it.

In most orchestras there is one trumpet; in many there are two; in the larger ones there are three players. The trumpet is, however, by no means the same instrument as the cornet.

Cornet-a-pistons.

THE cornet-a-pistons is too well known to need much description so far as appearance goes. It can never be compared with the trumpet for dignity nor, indeed, for brilliance. I do not go so far as to say I consider it a vulgar instrument, but I wish it had not been vulgarised.

Cornet solos are all very well on a pier-head, but they are not usually included in classical concerts. The French, strangely enough, have always used them in their symphony and operatic orchestras, but we so far have been inclined to fight shy of them. The day may come when we shall accept them instead of trumpets.

You may be inclined to ask why. The answer is, or is supposed to be, that, whereas the trumpet takes a lifetime to play well, "any fool" can play a cornet. As I play neither myself, I give that statement with reserve. But the fact remains; the cornet has not the same majesty and dignity which characterises the trumpet.

The Trombone.

THE next instrument on the list is the trombone; not a very old one, but it was, nevertheless, used in the days of Handel and Bach. It is played with a slide by means of which the player can shorten or lengthen the tube as he pleases and so produce the notes.

There are alto-tenor and bass trombones in fairly common use, but the alto is not much used in small orchestras. The tone of the trombone is noble and dignified, and amazing effects can be produced when it is played softly. When played loudly there is something very stately and dignified about a trombone.

In large orchestras where four horns, three trumpets, and three trombones are employed, there is no end to the possibilities for effects. Wagner and Tchaikovsky, particularly, were alive to the effects to be had with a good supply of brass in the orchestra; their work are heavily scored for these instruments in consequence.

Some composers have used the lesser known brass instruments, such as the tuba, the saxhorn, the ophicleide, and the serpent, some of which are very large and cumbersome instruments capable of producing very low notes.

A microphone is not kind to very low notes or very loud ones, and in the station studio the brass family is kept well at the back, and away from the microphone. So far as that goes, the same procedure is adopted in a concert hall; any other method would mean that the brass instruments would be bound to predominate.

Lack of Balance.

THERE is frequently such a lack of balance in small orchestras, especially municipal bands. Many a municipal conductor has had to fight a town council in order to secure enough string players. Town councillors are very seldom musicians, and very few of them appreciate that four first violins, three seconds, two violas, one 'cello, and a double-bass are not enough to stand up against two horns, a cornet, and a couple of trombones.

In properly balanced orchestras, such as the London Symphony, there are forty violins at least, with a full complement of the lower strings, the whole orchestra amounting to something like one hundred and twenty players. At the broadcasting studios it is possible to do with far less because, so long as the stringed instruments are nearer the microphone and the brass and drums further away, the effect can be so "faked" as to sound perfectly balanced.

What is known as a "brass band" is a different organisation altogether. All the instruments are wind instruments; there are no strings. The string portion of a symphony orchestra is replaced by military clarinets, a small type of clarinet in E flat. The rest of the band is composed of cornets, saxhorns, trombones, euphoniums, and suchlike instruments.

Different Scoring.

BUT the brass instruments of the modern symphony orchestra may be similar to, but they are not identical with, those which form what we call a brass band. They do not have the same task to perform. Cornets in a brass band are expected to produce much of the melody of the piece; trumpets in the modern orchestra do not preponderate in the same way. The method of scoring is therefore quite different.

So long as they keep to the type of music which is fitted for them, nothing can be said against them; it is only when they attempt to reproduce part of a Tschaikovsky symphony (which was written for a symphony

Receiving Pictures in the Air.—A remarkable experiment was recently carried out in Germany. A Fultograph receiving apparatus was carried in a large air liner, and successfully picked up photographs and charts through its wireless apparatus. It was an experiment to test the possibilities of transmitting to pilots such documents as maps and weather charts.
—Central Press, photo.

orchestra, and for nothing else) that they are to be censured by musicians.

If Tschaikovsky wrote a melody for violins, there is no sense in playing it upon a cornet; if Beethoven scored a passage for 'cellos, it should not be played upon a pair of euphoniums.

The modern orchestra has always welcomed brass instruments because of the great contrast which they afford to both the strings and the woodwind. For the same reason it has welcomed the use of the various kind of drums which have been introduced from time to time.

I will conclude with some remarks upon the drums as they are used in the modern orchestra. The value of the drum as a rhythmic instrument has never been questioned. The largest drum, the bass, is a wholly rhythmic instrument.

Indefinite Drum "Note."

It does not disturb the pitch of the music in which it takes part, as its "note" is very indefinite. It can, however, be of the greatest use in declamatory passages, where it helps to mark and stress the rhythm in no small degree. Much the same may be said of the military side-drum, which is frequently found in modern orchestras. It is capable of producing a great noise, which can, however, be effectively muffled by an alteration in what are called the "snares."

By far the most important of all the orchestral drums are those called the timpani or kettle-drums, because they are the only drums capable of producing a definite musical note. They are very distinctive in appearance and most people are able to recognise them at once. They consist of a skin stretched tightly across a basin-shaped shell made of copper or alloy.

The skin is held in position by being strained upon a wooden hoop and gripped by a circular iron hoop, which can be tightened or slackened by means of about eight screws.

There are always two and sometimes three kettle-drums, all of different sizes, and so of different pitches. The larger drum will produce the low bass F natural and can be "screwed up" to tenor C, a distance of a fifth. The other drum begins about B flat and goes up to the F. When a composer writes an orchestral work in which he requires to use kettle-drums he gives directions for the player to tune the drums to whatever pair of notes he requires. These two notes must thus be notes very frequently used in the piece itself.

If the work is in the key of C it will be useless to have the drums tuned to C sharp and F sharp, for example, because neither note is in the key-chord of C. As a matter of fact, the general, though not the invariable, plan is to tune to the key-note itself and the fifth above it. So that, in the case of a work in the key of C, one drum would be on C and the other on G.

There are very few chords (unless the work changes key very violently) which will not contain one or other of those notes. If the music does happen to change key for a few bars one naturally sees to it that the drums are not used—at least for a sustained roll. If the music changes key for a reasonable length of time, most composers give the drums a rest for a few bars and direct that the tuning shall be changed.

Those who frequent orchestral concerts will have seen the drummer busily altering the tension of his screws and listening to the drum as he taps it in order to be certain that he has tuned it correctly.

He will then wait patiently until his part tells him that he must play in the new key. That is one of the strange things about orchestral players; they seem to have an odd sense which tells them when so many bars have passed.

Those who are not orchestral players may well wonder how they manage to come in at the right time. They have no full score before them, as the conductor has; so that they have no chance of looking along the drum-line and seeing where they will have to come in.

All they have is a single part as full of silent bars as bars to be played, very often; and yet they will play what is required of them and, finding that they have eighty or ninety bars of silence, will take up the evening paper—at any rate, during rehearsals—putting it down again in time to take up their drum-sticks and prepare for what is probably a very effective entry!

The whole procedure is very strange, whichever way you look at it. When a composer writes an orchestral work it matters very much to him which instruments play certain notes; he will spend hours in making careful decisions as to his orchestration in many instances.

When his score is complete he will pore over it and listen mentally to the effects he has produced; he will mark the expression with every possible care; he will, in short, indicate everything he imagines will be of subsequent use to any conductor who produces his work. Once he has finished his score his responsibility often ends. At least, it does in these modern days, when copyists undertake the work of making out the band parts from his work. The score has been the product of one intellect and seems to have some cohesion about it.

When the parts are handed round to the members of the orchestra each player attends to his own part as though it were the only one. A drummer, for example, who has to be responsible for a single, though important, note 150 bars after the work has begun, will wait for that 150th bar quite unconcernedly.

About the 147th bar he will begin to watch the conductor carefully; at the 150th bar that note will sound exactly as the composer heard it in his own brain when the work was written.

The conductor is the interpreter, of course; upon his knowledge of the score and how to get the required effects everything depends. We who listen nightly to orchestral pieces floating out on the ether little realise very often the amount of brain-power that is being expended by so many people to bring about the required result.

The conductor's brain is the real influence, naturally; in his movements of arm and baton he has to suggest certain ideas to his men. It is amazing how quickly experienced players will understand a strange conductor's movements. The slightest movement will be interpreted as meaning something vital to the rendering of the music.

Weather Disturbances

Radio Held Blameless

RADIO broadcasting has been cleared of the often-heard charge of causing disturbances in the weather by Joseph Sanson, French meteorologist and engineer. In an exhaustive study of records covering French weather during the last two hundred years Sanson found that the same atmospheric irregularities that prevail today puzzled the citizens of France long before the Revolution.

As a matter of fact, meteorologists for some years have branded as a popular fallacy the belief that radio affects the weather. The notion became so widespread, however, that scientists deemed it necessary to make an investigation. The fact is that, compared with the enormous quantities of similar electrical energy released constantly into the atmosphere by thunderstorms, the ether vibrations from all the broadcasting stations in the world combined form less than the proverbial drop in the bucket.

But the weather, as all radio enthusiasts know, does affect broadcasting. Static, for example, is the voice of certain types of weather. It may be caused by lightning, snow, or rainstorms, and has been traced to advancing heat and cold waves. Sun spots and other solar irregularities also interfere with radio transmission.

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Radio Round the World

MODERN commercialism is rapidly absorbing the fruits of the efforts of radio research workers. One of the latest developments is an iceberg detector. Recent experiments showed that the photo electric cell could be used in conjunction with a parachute to "hear" the rays of light reflected from the berg. Because this was too much at the mercy of the winds a microphone was employed underneath the ship to pick up the sounds of a milling iceberg. This was effective up to six miles.

AN American exchange states:—"Radio television amateurs are now building apparatus to transmit motion pictures as well as receive them. A radio engineer of Seattle, Washington, has designed and built his own television transmitter and receiver. With this apparatus he broadcasts motion pictures, which are regularly received by his neighbours." The transmission of motion pictures does not involve the intricacy of ordinary television. The pictures are usually in silhouette.

AN unusual way in which fog causes damage is reported by an American radio station situated at Long Island. On several occasions during the winter months dense fog banks, rolling in from the Atlantic, have enveloped the transmitting aerials. The moisture, freezing to the wires, has weighed them down until they have snapped, thus interrupting the transmissions. To relieve the strain on the wires in such emergencies, the aerials are now equipped with counterweights, like those in a window sash, which rise as the weight of the wires increases.

WHAT is believed to be a record in aeroplane radio work has been established by the flying radio laboratory of a well-known radio manufacturing company, of Brooklyn, N.Y. The signals from its five-watt transmitter have just been reported by Mr. A. Feith, a radio amateur living in the city of Wein, in Austria. This unusual reception was accomplished on March 9, 1929, when engineers of the company were making a flight over Long Island to test the operation of a newly-installed bank of batteries. A wavelength of sixty-five metres was being used at the time, and both voice and telegraph transmission employed.

A VALVE shortage in the shadow of the South Pole has been averted by a special shipment of thirty valves for the Byrd Antarctic Expedition. These have been forwarded as the result of a request by radio from Malcolm Hansen, chief radio engineer of the expedition. The valves were placed aboard a Norwegian whaler, which will transfer them to a communicating ship when the Antarctic is reached. Imperative haste was called for as radio communication is the only means by which the expedition may contact with the outside world.

ESTIMATES as to the number of receiving sets that have been manufactured during 1929 vary from three and a half to eight millions, while actual sales are estimated at from two and a half to four millions, this being slightly higher than estimates of 1928 sales. To secure accurate figures, the Radio Manufacturers Association of America will make a survey of production and sales of radio receivers for the past two years.

AUTHORITY to adopt the radio system of Chicago police has been granted to eight large cities of the United States by the Federal Radio Commission. All police radio services are assigned to a single frequency, 1,712 kc/s (175.2 m), which has been reserved for this particular type of work. Since the power outputs of the stations are low, it is assumed there will be little interference. The system adopted from three central broadcasting stations, each using 500 watts power. The system, although a broadcasting service in the sense that the transmission will be by voice instead of by code and will be on short waves, as will the other services, will be outside the range of reception of the broadcast receiving set. Specially constructed short-wave receivers must be used.

A NEW system for dispensing radio programmes has recently come into prominence in many towns in England. All the apparatus necessary in each house is a loud-speaker and a push-button. The latter is connected to a central receiving station, which is in operation each day from six o'clock in the morning till midnight. At the central station is located a microphone which enables those in charge to acquaint listeners with news concerning programmes, etc. The fee charged for the use of the system is half-a-crown per week.

HUGE crowds flocked to the opening of Montreal's sixth annual Radio Exhibition, which was held during September. The show was officially opened by the Mayor of Montreal. "Radio," he said, "is at once the mysterious messenger bringing like lightning from the ends of the earth a call of distress or a message of joy. To-day the invalid, kept at home, can find in the radio the palliative that he needs for his misfortune." Mentioning various other uses to which radio can be put, the Mayor reminded his audience how, on the occasion of the recent thanksgiving service at Westminster Abbey for the King's recovery, the words and music had been broadcast round the world so that all parts of the Empire could listen to it. In Canada to-day, said the Mayor, 300,000 homes enjoy the benefits of radio, while in the United States 12,000,000 families can tune in, and 630 stations use the air.

ALTHOUGH the solder on the receiving set had scarcely hardened, the new Tatsfield station of the B.B.C. played a distinguished part in the reception and relaying of the running commentary on the Prime Minister's arrival in New York. The relay was primarily intended as an experiment to ascertain whether the use of aerials spaced over several miles would have any appreciable effect in overcoming fading. This system was invented two years ago, when trans-Atlantic relays were first proposed. Then, to a greater extent than now, fading was the great obstacle to trans-Atlantic programmes, and it was with this object of obtaining constancy of aerial input that the experiment was tried of feeding one receiver from a number of widely separated aerials, which would not all be subjected to fading at the same moment. The success of the relay was such that the B.B.C. intend in the near future to erect a much more elaborate spaced aerial system than the one at present in use.

FOLLOWING the singing shovel, the philharmonic radiator and the pan of beans which broke itno melody, we now hear from Manchester of the self-playing telephones (states "Popular Wireless"). The report says that a Mr. J. Penney and Mr. T. Butterworth can contrive to give you a programme if you will but wear the 'phones. The set is in another room, and there is guaranteed no connection. Maybe! But I am disappointed. Why drag in the 'phones? Who will invent a jazz-playing jelly for a Christmas novelty?

THE latest "tall" American story of radio is to the effect that shortly after midnight not long ago Chicago's eighty-seventh bomb outrage (1929 vintage) took place in the building, the top floor of which is occupied by the broadcasting station WEDC (states "Popular Wireless"). The explosion was heard all over the Middle West by an appreciative and discriminating audience. The engineer of the station alleges that at the time they were broadcasting, "I Faw Down and Go Boom," and that the "boom" of the story and the boom of the bomb synchronised perfectly. All right, Hans Andersen!

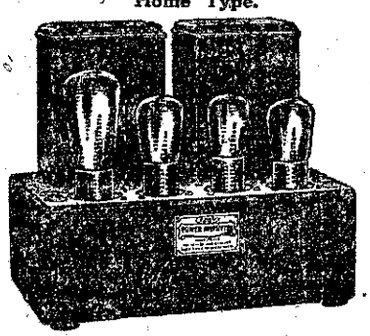
MOTION pictures are now being broadcast nightly by shore waves over a powerful radio station located ten miles outside of Washington, U.S.A. These broadcasts are being made over the new television transmitting station of C. Francis Jenkins. This station is powerful enough to be capable of covering the Eastern United States with radio pictures.

IT is something of a disappointment to learn that the new cable which is said to be capable of permitting telephony across the Atlantic will not be suitable for use in relaying broadcast music. "Perminvar," the new metal which is to be employed for this cable, will permit speech frequencies to pass without "repeaters," but apparently cannot do the same for the wider band of frequencies necessary for music.

IT was reported in the Press fifty years ago that Professor Loomis, of West Virginia, claimed to have demonstrated "that at certain elevations there is a natural electric current by taking advantage of which telegraphic signals may be sent without the use of wires." So near and yet so far! Twenty-five years ago came the sad news that the Indian Government made unsuccessful attempts to establish wireless telegraph communication between Diamond Island and Amherst, a distance of 212 miles! The daredevils!

OWING to the gradual expansion given to radio advertisements in the German programmes, it has now been decreed that no microphone publicity shall be carried out in future on Sundays and holidays. It is also forseen that such broadcasts will shortly be confined to the morning transmissions only.

Home Type.



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Home and Concert AMPLIFYING UNITS

For purified reproduced tone qualities Emmco's Amplifying Units are unequalled. The Home Type offers endless enjoyment by re-creating the gramophone records beyond recognition. **PRICE £18/10/-**

The Power or Concert Amplifier, suitable for use in Concert Halls, Theatres, Cabarets, etc., will operate from any Radio Set or Phonograph Pickup, and is easily adapted for use with a microphone. Has 4 watts output of positively undistorted volume and is capable of operating two Dynamic Speakers of the approved type. **PRICE £30.**

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The New Zealand Radio Record

(Incorporating the "Canterbury Radio Journal.")

P.O. BOX, 1032, WELLINGTON.

Published Weekly. Price 3d. Subscription Post Free in advance, 10s. per annum; booked 12s. 6d.

Literary communications should be addressed: "The Editor"; business communications to "The Manager."

Advertisers are asked to note that alterations of advertisements should be in hand Friday of each week for insertion in the succeeding issue, printed Tuesday, bearing Friday's date. No responsibility is accepted for blocks remaining unclaimed three months after each insertion.

N.Z. RADIO PUBLISHING CO., LTD.,
P.O. Box 1032, WELLINGTON.

WELLINGTON, FRIDAY, JANUARY 10, 1930.

NOISE, AND ITS RELATION TO RADIO BROADCASTING.

AT its last meeting, the Wellington City Council decided that notices should be served upon gramophone and radio dealers requesting them to refrain from operating their instruments in the street doorways of their premises. This is a step to reduce the noise level of the city, but it is likely to cause a great deal of controversy, for several dealers claim that by this means they secure a large proportion of their business, even as much as 25 per cent. in the case of one trader. The motive of the Council is in accordance with the lines of thought now being given publicity in America and Europe. No less authority than Thomas A. Edison has predicted that sooner or later increasingly noisy cities will end by deafening all of their citizens permanently. Psychological analysis carried out in several American universities has proved this to be the case. The results of these experiments indicate that unless the noise level can be reduced the vitality of the city population must materially suffer. The agitation for quieter cities has gathered momentum, and in London, New York, Chicago, Berlin, Budapest, and many other of the world's largest cities, officials or commissions are seeking to reduce the noise level.

One of the first moves of a New York commission was a thorough analysis of the noises in certain areas, and this showed that radio loudspeakers were responsible for much of the controllable noise. Prior to this thousands of violent letters of protest were received by the New York City newspapers, health officers, and noise experts against the needless nuisance of the radio loudspeaker playing in the street or audible outside the owner's home. Responding to this universal complaint American newspapers have been agitating for reasonable regulations to govern the operation of radio apparatus. We can, in view of the course adopted by the larger cities, understand the action of the City Council.

Yet there is another aspect. Does the playing of the modern radio or radio and gramophone combination constitute a noise? A short while ago there could be no doubt that the only justification for the loudspeaker outside the dealer's shop was the novelty of receiving broadcast programmes. But the instrument of to-day is of no mean calibre, and its playing in the doorways of musical houses is, in most New Zealand cities and towns, welcomed by the public. What is wanted is regulation in the volume of sound, and this is difficult. Very loud music clashes with other street sounds and causes noise which is distasteful, with the result that the radio instrument is termed "noisy and undesirable." If the dealer would bear this point in mind, and not endeavour to out-class in volume his competitor, the steps taken by the Wellington City Council would not be necessary.

But the problem goes beyond the cities. With the increasing power made available by the operation of power packs and the greater volume obtainable through the use of the new valves, there is a temptation for the set-owner to operate his set at maximum volume, and if this is too much for the room to place the speaker outside to "entertain" the neighbourhood. This is all very well up to a point, but one must remember that however firmly he is convinced that his apparatus is perfect, others may not think the same, and his action may be displeasing. Very few home receivers can handle enough volume without distortion to entertain the neighbourhood. The result is that distorted signals thrust upon unwilling listeners do a considerable amount of harm both to the owner and, more important, to radio. During daylight hours the trouble is not so serious, but in the stiller hours of the night the sounds travel farther and create more disturbance.

Even within the home volume should be regulated so that to the unaccustomed it is not overbearing. Referring back to the results of the American universities, we find that the continual operation of the radio set at volume above that of comfortable audibility is a devitalising factor that must, in the long run, make itself felt in the nervous constitution of the race.

The Old Year Passes

World-wide Broadcasts

SITUATED as New Zealand is, near the 180th meridian, the YA stations were the first stations in the world to greet the New Year. All four stations broadcast the popular celebrations which always accompany the passing of the old year and the advent of the new.

From New Zealand the listeners-in could pass to Australia, where, two hours later, the Brisbane, Sydney and Melbourne broadcasting stations told how the old year died. After them came Adelaide and Perth. And so on round the world. As the hour between 1929 and 1930 came and went some station on British or foreign soil was announcing the fact and describing how the event was being celebrated.

On the evening of our New Year's Day New Zealand listeners-in on short waves were able to follow the American celebrations in city after city right across the vast continent. The U.S.A. broadcasting stations had been linked for the purpose so that listeners in the Central and Westesrn States could also hear the rejoicings in the Eastern States, and vice versa. As the midnight hour travelled westward the principal towns took up the broadcasting, which was relayed to all the other stations. All this could be heard on short-wave sets in New Zealand in the early evening of January 1.

The final of the American celebrations was a visit to Chinatown, in San Francisco, where the Chinese, who have now adopted the Western calendar, welcomed in the New Year with splendid enthusiasm. Their weird orchestral music came through well.

Sir Joseph Ward

Broadcasts New Year Message

THE many thousands of people throughout New Zealand who listened-in to 2YA and 3YA on Thursday, January 2, realised what a personal and intimate thing the broadcasting service is. They were transported to the home of Sir Joseph Ward at Heretaunga, Wellington, and heard New Zealand's Prime Minister speaking just as they would have done had they been in the room with him.

For months past Sir Joseph Ward has been recovering from a severe illness and has been living in more or less seclusion from the public. His callers have been limited in number and they have considered themselves privileged to have had the opportunity of conversing with him. But by the wonder of wireless the great body of ordinary people were able on Thursday evening last week to be in what seemed personal touch with Sir Joseph. A microphone had been installed in the Prime Minister's home and Sir Joseph carried on what seemed to every listener-in to be a personal conversation.

Broadcasting is the greatest breaker-down of barriers that there can be. Everyone who heard Sir Joseph Ward now feels like a personal caller who has inquired as to the health of the Prime Minister, been admitted to his room as a special favour and heard him speak, sympathised with him in his illness, and wished him a quick return to his normal health.

Use Our Booking Offices in Advance

S-O-S

TRAVEL IN COMFORT BY CAR

WELLINGTON — PALMERSTON
NEW PLYMOUTH

HUBBY TOOK THE SYDAL SAMPLE.

"Please send me a jar of Sydal. You sent me a sample by request a few weeks ago and my husband is so delighted with it for shaving that he will not be without it now. Please send a sample to my sister in Christchurch, as I am sure she would be as pleased with it as we are."

WANTED AND FOR SALE.

For column of casual advertisements see page 32.

Have you obtained your copy of the "N.Z. Radio Listener's Guide"?

Dealers and booksellers 2/6; Post Free 2/9—P.O. Box 1032, Wellington.
Available everywhere.

England's Prime Minister in New York

Broadcast of Arrival

THE recent arrival of England's Prime Minister, Mr. Ramsay MacDonald, in New York, was the occasion of a very successful world-wide broadcast. The following is an interesting account (appearing in the "Manchester Guarding") of the reception, and of the elaborate preparations made to ensure the success of the broadcast:—

When the Berengaria drew into New York harbour with Mr. Ramsay MacDonald aboard, the hooting of sirens and the shouting of huge crowds vibrated on the microphone on the quayside, and a vivid impression of the city's reception to the Prime Minister was broadcast to the world. If noise was any indication it was indeed a great reception, for the announcer's voice was almost drowned in the uproar, and even the strains of the military band (which, said the announcer, "oughtea make a thrill run up your back") was hardly distinguishable.

It was a "good old New York welcome," and by the sound of it they do things well in New York. But noise was not everything; according to the announcer—whose voice came through clearly in the intervals of comparative quiet—there was colour as well, the light dress of the crowd adding to the splendour of the military escort, "with its neat white leggings," and the hundreds of police.

One could almost see the thousands of streamers thrown over the procession from the quay to the City Hall, and—again quoting the very entertaining announcer—"it is a good job Broadway is so narrow, making it easy to clean up afterwards." There must have been several microphones at work, for after the landing of the party a glimpse was given of the arrival at the City Hall, the welcome in the aldermanic chambers, and the public reception in the great hall. There was music and shouting everywhere, and uproarious laughter, too. That was when the reader of the scroll of welcome described Mr. MacDonald as "Prime Minister of the United States." After shouting and laughter had died down the speaker corrected himself by saying, "I was only expressing a hope."

Mr. MacDonald's voice was exceptionally distinct and impressive, the only fault being that he lowered his tones too much at the end of a sentence, and the microphone could not always catch them. Particularly impressive were his opening eloquent remarks that he had come "on a mission of peace," and that the two nations were roadmenders paving the way for their children and grand-children. 'Wherever the work of God is to be done, we shall be side by side in the doing of that work," he said, and the cheers that greeted this remark must have resounded round the world. If only from a technical point of view, the broadcast was a success.

Have you secured your copy of

"N.Z. Radio Listener's Guide?

Dealers and Booksellers 2/6: Post Free 2/9—P.O. Box 1032, Wellington.

Now Available.

Christchurch Repertory Theatre Society

To Present Programme at 3YA

THAT splendid organisation in Christchurch known as the Canterbury Repertory Theatre Society, which performs under the aegis of Professor Shelley, of Canterbury College, will provide the whole of the evening's programme at 3YA on Thursday, January 16. The entertainment has been arranged for the 3YA Musical and Dramatic Committee. The programme will include selections by the Society's orchestra, these comprising the overture "Caliph of Bagdad," a selection from "Maritana," "Norma," and "William Tell." There will be two short plays and a dramatic presentation of Ibsen's "Peer Gynt," in which the orchestra will take part. "Anita's Dance," and "In the Hall of the Mountain King" will be played, and "Solveig's Song" will be sung by Mrs. W. B. Harris. This presentation of "Peer Gynt" will occupy half an hour. During the evening Professor Shelley will himself enact a Shakespearian sketch, the famous quarrel scene between Cassius and Brutus in "Julius Ceasar."

Interspersed through the programme will be several songs. Mrs. A. Harper will sing the "Habanera" (from "Carmen"), Quilter's "Shakesperian Songs" will be sung by Mrs. W. H. Harris, and Mr. A. G. Thompson will sing "Star of Eve" (from "Tannhauser").

N.Z.A.R.T. Convention

Successful Gathering in Auckland

(By "Call Up.")

THE first annual convention organised by the New Zealand Association of Radio Transmitters was held in Auckland on December 27 and 28. About thirty members attended.

On Friday, 27th, no very serious business was done. During the morning visits were paid to several of the stations worked by amateurs round about Auckland, the opportunity being taken to send messages to friends in other centres. The party lunched at the Mount Eden tea kiosk, and then set out in buses on a comprehensive sight-seeing tour of Auckland. They visited 1YA for a time during the afternoon transmission, and in the evening attended the Regent Theatre.

Delegates assembled at the Leys Institute, Ponsonby, at 9.30 a.m. on Saturday, Mr. H. P. V. Brown, of Christchurch, presiding. A resolution was carried approving the principle of organised communication from one end of New Zealand to the other. The chairman said the time was opportune, as the great need of a radio relay chain had been demonstrated during the recent earthquakes in the South Island. If there had been a definite relay system the association could have given valuable service to the stricken areas. He believed that what was needed was a complete chain of communication which could be established at short notice. This would necessitate the keeping of watch schedules and the sending of test messages. A most important adjunct would be an efficient portable transmitter, together with a collapsible antenna equipment which could be erected in a few minutes. After a little practice any operator should be capable of speedily establishing this portable station.

Such a chain could be made available to the Post and Telegraph Department when regular communications were interrupted by storms or other causes. In discussing details of the relay chain scheme members agreed that Sunday should be the principal night, as telegraph offices were then closed, and an alternative method for the transmission of urgent messages was needed. A special committee was set up to finalise details of the scheme.

It was announced that, whereas there were only eighteen members of the association three years ago, there were now 250, and this total was growing rapidly. The meeting received the result of a ballot which resulted in the election of Mr. T. R. Clarkson as Dominion president and Mr. C. N. Edwards as vice-president.

On the Saturday evening a dinner was held in the Akarana Yacht clubrooms, Mr. H. P. V. Brown being in the chair. Included among the toasts were "The King," "The Visitors," "The Post and Telegraph Department," "Kindred Associations and Radio Societies," "Absent Friends," "The Secretary, Auckland Branch," and "Headquarters, Officers Past and Present."

A number of musical and other items were rendered during the evening. Mr. Bob Fowlds gave some piano pieces, Mr. J. Housego sang, and the N.Z.A.R.T. jazz band played some selections. An amusing feature was the mock trial held by a number of members.

A picnic was to have been held at Motuihi Island on Sunday, but this was postponed for a fortnight owing to threatening weather. Altogether the gathering was a most successful one, and apart from the business and discussion of the convention, members had a most enjoyable holiday. The second convention is to be held in Wellington next year.

For Sale or Exchange.

See page 32 for column of casual advertisements.

"Pioneers' Night"

4YA Programme a Success

THE "Pioneers' Night" programme which was presented at 4YA on Saturday, December 21, proved a striking success and has been the subject of many encomiums. It was an excellent entertainment for both young and old. It proved a link with the past which it brought before the vision of the present generation, and it revived the recollections of the older people.

One correspondent makes the following comment in the course of a letter to the Broadcasting Company:—"The programme was all it promised to be. I have special interest in the description of the "Strathallan's" voyage by the fact that an uncle of mine was a passenger by that vessel, and the incidents described coincided with his description of the journey out to New Zealand. The experiences related by our worthy friends Messrs. Thompson and Bain were very unique, and were highly appreciated by us. Just here permit me to offer a suggestion: That a few reminiscences be put over the air occasionally by old pioneers, to be an object lesson to our young folks, whose pleasant present surroundings were made possible by the pluck, courage, and sacrifice of our worthy forebears. In conclusion I hope you will convey this humble appreciation to all the contributors to the programme, not forgetting our indispensable interlocutor, Big Brother Bill."

Electrical Leakages

THE Mount Victoria area of Wellington, including Roseneath, has been having a bad time lately with electrical leakages. The noise is like "frying," and is sufficiently intense to overwhelm all "outside" reception while it lasts. Fortunately it is intermittent and runs from five minutes to ten minutes at a time. The noise has a definite peak in frequency, and is loudest somewhere between the frequency of 3YA Christchurch and 2BL, Sydney.

The Government Tourist Dept's.

Booking System

Considered by Experts

The Best in the World

Offices in all Main Centres

Our Mailbag

A News Session Complaint.

THERE are a few things I would like to say that may seem a little nasty about the service given, in parts, to the 50,000 contributors of 30/- per year. There are certain results in sporting events that are eagerly awaited at news session time by many people. The news session is excellent, but there is a certain amount of carelessness in the announcing of same. For instance, to-night Mr. Announcer took something like a split minute to tell the world the results of to-day's trots at Auckland, thus giving nobody an opportunity to mark the paper for the benefit of those who were unable to listen. Country papers do not get the results of every meeting, as they go to press so early, but there is always the wireless to fall back on. If the most important of the YA stations is not going to improve its ways re racing results, it is not much to fall back on. 1YA and 3YA are much better at announcing this type of news. I am as annoyed as the proverbial meat-axe that I ever purchased a set when the results are given as poorly as they were to-night. It was almost as bad as the night we were told that Hector Gray was to motor from Whangarei to Wellington to ride at Christchurch, and then omitted to tell us the Whangarei results. A live news editor would look on this class of news as something in the nature of a scoop, as it would be beating the newspapers to it.

Another thing, would it be possible to get 1YA and 3YA put up several watts in power so that they could be heard by country subscribers during daylight hours. Don't say get a better set—I have a good one, and while 2YA leaves little to be desired on daylight work, it seems to me that the power is boxed up in one station to the detriment of the others. If listeners could get 1YA here in daylight they would have reason to hope for 100,000 listeners next year. I am annoyed about to-night's broadcast of news, and I know it, so you can discount my complaint a little, but as 2YA is our main station, we look to it for our news. Otherwise 2YA is, in my opinion, one of the best and we would not be without it.—I am, etc.,

SPARTON SIX,
Dannevirke.

A Maori Appreciation.

AS a Maori student and sometime contributor to the press of the Dominion, I would tender my thanks for, and appreciation of, the courtesy of those gentlemen who showed me over the well-equipped and commodious premises, and for explaining to me the wonders of the equipment of 2YA. I have occasionally listened-in, but it was a peculiar treat to see and to hear at first-hand all that radio means. The hour that I spent there last evening was most interesting and profitable, for it included a lecturette by the distinguished Hare Hongi on Maori subjects which have a particular charm for those who take a deep interest in the study of the Maori race. Such lecturettes ought to assist listeners-in in the correction of the deplorable malpronunciations of our Maori names and place names, for example: Waitara and Taranaki, which we daily hear used as if spelt Wytarra and Tarranacky—mere tarradiddle. The long name Tetaumataokiokingawhakatangitangihangakoauauatamatea, must have astonished some of your listeners-in; but that unique name was correctly given. It was a very happy thought to have the Lord's Prayer given over the air in Maori. I am not aware that it has been done before. Tena koutou katoa i te Tau Hou (Greetings unto ye all in the New Year).—Yours, etc.,

RORE JOHN JOSEPHS,
Maniapoto Tribe, Te Kuiti.

Relaying Trials

THE German Reichsfunk has obtained permission to instal microphones in the Berlin Law Courts with a view to relaying famous trials which may interest the general public. It is probable that the first transmission of this kind to be carried out will be that of the trial of the thirty Fascists who were arrested during the recent anti-republican demonstrations.

PHILIPS
RADIO PRODUCTS

New Type Eliminators.
Moving-Coil Speakers.
Concert Grand Speakers.
Baby Grand Speakers.
Bypass Condensers.

Direct Supply Co.

Phone 32-513. 277 DURHAM STREET, CHRISTCHURCH.
ALL RADIO REPAIRS.

Sporting Service

Discontinuance Resented

THE fact that 2YA has discontinued its practice of giving sporting results during the afternoon and a summary at night has aroused a great deal of comment among sporting listeners. Following are letters of listeners registering their displeasure:—

HAVING returned from a three weeks' holiday in the country I am taking this opportunity of expressing our keen disappointment at the sporting service provided by 2YA during the holidays. No racing or sporting results were put on the air until seven p.m., and the sporting summary (a much appreciated service) was conspicuous by its absence. As no notice of the curtailment of these services was inserted in the "Radio Record" I anticipated the same wonderful service that was provided during the previous holiday season, and therefore purchased a portable set to take on our holiday. Our party of sixteen "sports" was very disappointed that the sports results had been held over till seven p.m. From what we have learnt since our return to Wellington, from numerous listeners, it is the Broadcasting Company's intention to adhere to the arrangement now in force, and I can assure you, sir, that if that statement is correct the company will lose a great number of licenses, persons who ask from radio only the sporting results and relays. The columns of the "Radio Record" during the past twelve months have contained some appreciative letters concerning the "sporting service" provided by 2YA, and naturally the action of the Broadcasting Company is causing considerable comment. When 50,000 licenses were obtained we expected improvements in the sessions, but the action of the company over the sporting from 2YA will do more harm than the officials are aware. We fully expected that this year the sporting authority from 2YA would appear before the microphone, and so bring the local station up to the standard of 3LO and 2FC, whose racing announcers are exceedingly popular.

I will look forward to a satisfactory arrangement being made, otherwise I will scrap my set, along with many others, before March next.—"Don't be Hard" (Petone).

HAVING installed a radio set for the boys in my stable some months ago I should like to know if 2YA is going to discontinue giving results of sporting events during the afternoon session. As a trainer of racehorses I have derived great pleasure from the sporting services from 2YA, and if it is abandoned my set will be useless. Several owners of the thoroughbred have installed radio sets for the lads in their stables, and the sporting sessions from 2YA are eagerly looked forward to. The practice of announcing when nominations, etc., close is appreciated, while 2YA's sporting announcer's reviews of fields has the greatest respect of the racing fraternity. I trust that the old order of things will be restored soon.—"A Trainer" (Heretaunga).

WE have been accustomed to a very efficient sporting service from 2YA during the past twelve months, a service greatly appreciated by all sporting listeners. A bombshell was thrown into listeners' circles prior to the holidays, when the Broadcasting Company announced the abandoning of all sporting results until the 7 p.m. session and that the sporting summary at 10.45 p.m. on Saturdays is in future to be discontinued. The reasons are as follows:—The afternoon sessions are not to be interrupted, while the majority of listeners prefer dance music between 10.45 and 11 p.m. on Saturday rather than listen to a sporting summary containing as it does the results of all events held during the day and night, together with any later news of interest to listeners. I am sure the step taken by the company will have a serious effect on renewal of licenses. Not every listener takes out a license to hear music, and in my case the reason I took one out was to hear sporting information. The sporting commissioner at 2YA should have been proud of the way his sporting sessions were appreciated, as letters in the Press prove. Your suggestion some time ago that a sporting authority should appear before the microphone and discuss racing fields of meetings in and near Wellington was an excellent one, and worthy of favourable consideration from the authorities. When 50,000 licenses were obtained sporting listeners expected that your suggestion would be fulfilled, but what do we have? The whole service is now squashed.—H. M. Matthews (Johnsonville).

Radio in 1929

Great Advances

MR. JOHN V. L. HOGAN, radio engineer and inventor, writes of the accomplishments of radio in 1929 in "Popular Science." The growth of radio during 1929 has been not only in the improvement of technical processes and apparatus, but also in the organisation and extension of its services and in the adaption of radio principles to work in various other fields.

Public contact with radio is mainly through broadcast reception. Here the wide adoption of the A.C. type of screen-grid valve has provided receivers of greater selective ability and of exceptional sensitiveness; and it seems probably that newer developments will reduce the number of valves required in order to obtain the most desirable results. There is also a definite trend toward the use of automatic and distant-operated station selecting devices, which further simplify the manipulation of home receiving sets.

Efficient transoceanic telephone service has been shown to be adequate for relaying international programmes and international radio telegraph service has been expanded. On the American continent there is growing a network of point-to-point telegraphic service by radio. Even television has now been shown to be capable of simpler and more dependable practical applications than many had thought feasible.

MR. CHAS. LAMBERG.

The well-known sports announcer. During the past two seasons he has described the Rugby football matches in Wellington for the entertainment of 2YA listeners.

—S. P. Andrew, photo.

MR. E. RANSOM MYERS

An artist who renders acceptably songs both grave and gay. He also possesses talent for writing topical verse, which he and other artists use with success.

—S. P. Andrew, photo.

MRS. E. RANSOM MYERS

Is one of Wellington's well known teachers of singing and elocution, and is the possessor of an excellent radio voice. She is a vocalist and elocutioniste of outstanding merit.

—S. P. Andrew, photo.

MISS MONA CARRICK,

A young contralto from the Lower Hutt district, is the possessor of an excellent radio voice, and is always heard to advantage in ballad numbers.

—S. P. Andrew, photo.

Our leading article this week is devoted to reduction of street noises. The picture shows the problem being tackled in New York, where it was shown that radio loudspeakers were responsible for much noise that could be kept under control.

Aerial Laboratory

An American Innovation

A HUGE "telephone booth on wings" has been added to the equipment of the Bell Telephone Laboratories, of New York. It is an all-metal, trimotored monoplane equipped with unique apparatus for testing and improving radio telephone instruments and methods designed for the use of transport and air mail pilots.

In place of seats the fourteen-passenger cabin contains two long laboratory benches and a wide variety of antennae. On the top of the fuselage, two stream-lined vertical rod antennae are mounted. Besides there are two trailing wire antennae and several wing tip supports for various additional experimental aerials. The metal 'plane itself acts as a counterpoise ground.

To supply electric current for the mid-air tests batteries and generators are carried aloft. Some of the generators are run by the engines of the 'plane and others are wind driven. All metal parts of the machine are bonded or electrically connected, and all ignition wires and spark plugs are carefully shielded to minimise interference.

An intercommunication telephone system is one of the unique features of the aerial laboratory. It enables experimenters in different parts of the 'plane to talk to each other by 'phone as well as to converse with persons on the ground. Besides testing the latest advance in two-way radio telephone equipment, the 'plane will be used to measure the strength of radio waves at different altitudes under varying weather conditions and above different kinds of territory.

A midget radio head telephone receiver, said to be the smallest in the world, was used by the pilot of the 'plane, in one of the first tests. This tiny instrument is designed to fit into the ear channel, of which it conforms in shape.

A smaller 'plane, a four-passenger cabin monoplane, was previously used by the laboratories in similar experiments. The new machine will allow more extensive tests.

Two-way radio telephone systems have been used on the London-Paris passenger 'planes for some time and have been adopted by several American transport companies. They allow the pilot to keep in constant touch with the ground and to receive detailed weather reports as he flies. A new lightweight set, which is installed in the tail of a 'plane, has recently been given successful tests on the Transcontinental Air Transport machines. Conversations are said to have been held with points more than six hundred miles away.

ON the shelf of every Radio Listener should be found the

RADIO LISTENERS' GUIDE

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Teaching Music by Radio

A Method in Use at the Berlin Academy of Music

Said to Surpass Other Systems

FROM time to time varied suggestions and schemes have been put forward concerning the possibilities of utilising the manifold resources of radio as a means of teaching music. Such a system has been adopted by the Berlin Academy of Music, and has been successfully operated for over twelve months. A central radio station has been established where musicians, on the one hand, and radio engineers, on the other, are given an opportunity of co-operating in an investigation of certain important problems of radio broadcasting and of exchanging their personal views and experiences.

All the halls and auditoriums of the Academy, as well as the laboratories forming part of the radio stations, have been equipped with wonderfully efficient microphones, receiving sets, and loud-speakers. Direct current of variable voltage and intensity is made use of to operate the amplifiers and loud-speakers, and is derived partly from accumulator batteries and partly from special machine sets.

System of Communication.

THE amplifier-room comprises large switchboards whence the electrical energy is properly distributed; moreover, each room connected up to the plant has its own small switchboard, to which either microphones or loud-speakers, as the case may be, are connected. Finally, each room communicates by a direct telephone line with the amplifier-room, so that the operator in charge of it can at any time be given all necessary instructions.

The studio comprises not only the usual removable draperies serving to damp any echo, but elastic wooden linings on the walls. Also, provision has been made for ascertaining the best conditions to give satisfactory acoustics. The principal innovations based on the use of radio which have been adopted at the Academy of Music are briefly enumerated as follows:—

Remote teaching of singing has been found thoroughly practicable and is largely made use of. The pupil, according to this scheme, stays in his or her own dwelling, while the teacher from his study, which might be in a far-distant place, providing that a satisfactory connection can be established, gives instructions as he would be expected to give in the case of an ordinary lesson.

All that is required to this effect, of course, is that a duplex telephone connection between the two rooms be possible. Remote conducting is another practice which has been adopted at the Academy. The various members of an orchestra or choir are placed in various rooms having no mutual connections, but communicating with the study of the conductor, who is seated at his piano, the rhythm of which is transmitted by radio to each of the musicians.

Broadcast Players.

IN connection with a Swiss festival held recently, an orchestra was played in Berlin, the various musicians being located in that and various other towns of Germany, France, Italy and Switzerland respectively.

A recent invention of interest at the Academy is the steel-wire voice recorder, an apparatus by means of which singing students may test their own voices. This apparatus, invented by Dr. Stille, is based on the variable magnetisation of a steel wire or band passing in front of the poles of an electromagnet actuated by microphone currents.

When reversing this process—that is, causing the magnetised wire or band to pass in front of the same or a similar electromagnet—currents corresponding to the original microphone currents will be induced in its circuit, so that a remarkably faithful reproduction of the speaker's or singer's voice is heard in a headphone or loud-speaker connected up to the electromagnet.

Students check their Voices.

THIS apparatus is freely made use of by students to check any defects of their own voices; it is even resorted to by professors in more thoroughly gauging their pupils' achievements.

An interesting method of ascertaining the acoustic qualities of wall linings is used by Dr. Fischer at the Academy. A tube about 25 centimetres in diameter and 2 metres in length contains in its interior a miniature loud-speaker which produces a standard sound effect.

The tube terminates at one of its ends in a reversed funnel, at the end of which the emerging sound strikes a plate of the material to be tested. The reflected sound waves are picked up by a microphone communicating with the loud-speaker or headphone in another room, where comparative tests are made, another loud-speaker or headphone, inserted in the same circuit, being adjusted until equal loudness is obtained. This method enables the sound reflecting properties of various materials to be ascertained with great accuracy.

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Experiences with a Portable

Through the Urewera Country

THE following is an interesting extract from a letter received from Mr. A. H. Fear, a keen wireless enthusiast who is assisting in a geological survey in the heart of the Urewera district. As the party is often completely out of touch with civilisation for weeks on end, the value of the entertainment derived from the radio set, especially during the Christmas season, can be readily appreciated. "We have a splendid little portable wireless set here, and are able to receive 2YA every night—as a matter of fact there is a concert coming over now. It is a Browning Drake 4-valve, and we use dry cells for our 'A' and 'B' batteries. Considering the conditions, the results obtained are excellent. The aerial, which is slung between two trees, is not very high, and our earth consists of an eight-foot length of pipe sunk lengthwise in the ground to a depth of about 12 inches. Neither the aerial nor the earth lead joint are soldered, but we get excellent results in spite of this.

"A church service broadcast from 2YA is now coming over, and it couldn't be improved upon. Static is almost entirely absent. Last Thursday we enjoyed a splendid band concert by the Wellington Artillery Band. The reception was so perfect that the cars tooting in the streets outside the broadcasting station came over so loudly that for a time we thought that a car was near our camp—miles from any car road. Our results are even more unique when considered in the light of expert opinion that our present camping locality is radiologically dead—that is, people here seldom get results outside the local stations."

A New Instrument

Turns "the Howls" to Music

AFTER years of work on an instrument that will produce music when a person waves his hands before it, a Russian scientist recently adapted it to commercial use. It has broadcast music over the radio and is being demonstrated for sale to the public.

The cabinet of the instrument is shaped somewhat like a typewriter cover with a metal upright post at one corner. Within the cabinet, eight valves arranged in two oscillating circuits produce a heterodyne beat note similar to those which cause howls from a radio receiver when two or more broadcasting stations interfere with one another. The pitch of the note is controlled by the position of the operator's right hand relative to the metal post. A metal loop antenna is provided at the other side of the device to control the volume. When the left hand is raised or lowered above this antenna, the volume increases or decreases proportionately. The music produced somewhat resembles the tones of a violin or a 'cello.

Obituary

Mr. Hamiora Hakopa

RADIO listeners throughout New Zealand will regret to hear of the death of Mr. Hamiora Hakopa, the Maori announcer who took a leading part in the presentation of the Radio Pageant of the Maori Race at 2YA in 1928 and 1929. He was a well-educated native and, as listeners know, he spoke splendid English. His description of the various phases of the pageant contributed materially to the success which attended each broadcast.

When news of Mr. Hakopa's death, which was due to pneumonia, was received by 2YA appropriate reference was made by the announcer. His death came as a great shock to the members of the Wanganui Maori Party, in whom the spirit of camaraderie is particularly strong.

Broadcasting Penetrates Into Cave

SNUGLY lodged in the deep recesses of the Mammoth Cave, in Kentucky, with a superheterodyne receiver and loop antenna set up beside them and seventy-five feet of sandstone rock above their heads, two graduates of the McGill University, Montreal, Canada, recently listened-in on radio programmes from American stations. They were experimenting to find to what extent radio waves will penetrate rock. With a 300-foot aerial, coupled to the loop of the set, the programme was distinguishable through 300 feet of rock.

Similar experiments previously had been conducted in the Mount Royal Tunnel at Montreal. In both the cave and the tunnel it was found that high-frequency stations could not be tuned in, but that low-frequency stations came in loudly. The reception was hardly as strong as that in the open air, however.

Maori Pageant Recalled

The late Mr. Hamiora Hakopa in Native dress.

Via Alaska!

An Interesting Incident

SOME New Zealanders in New York were recently greatly interested to receive in an envelope bearing an Alaskan postmark some New Zealand racing news. It happened that a radio listener in Alaska, which is in the region of the Arctic Circle, listening in to 2YA one night heard the results of certain New Zealand horse races. Having met some New Zealanders and knowing their New York address the idea occurred to him to send them the results by way of a joke.

The man in Alaska heard the 2YA announcer almost instantaneously; his letter to New York took nine days! This incident is related in a letter received by the last American mail.

Church Broadcasting in U.S.A.

Forty Million Listeners

THE radio religious services in U.S.A. are broadcast through a network of stations to a congregation estimated to number some forty million persons. Three services are given each week. Dr. S. Parkes Cadman, who remains the most popular radio preacher in the United States, will conduct one series of services, Dr. Harry Emerson Fosdick another, and Mr. Daniel A. Poling, president of the General Synod of the Reformed Church, is in charge of more informal services designed specially to appeal to younger people.

The aim with all the services is that they shall interest particularly people who are not confirmed church-goers, and shall avoid anything savouring of sectarianism. It is claimed by the organisers of these national religious services that by avoiding narrow doctrinal differences and concentrating upon the essentials of the Christian faith, they advance the cause of church unity and at the same time improve the standards of local church services.

Photograph of the performers in the recent Maori Pageant which was broadcast from 2YA. The late Mr. Hakopa is seen second from the left.

THE D.X. CLUB

Views and News.

Identification Wanted

CAN anyone identify a station on about 1240 k.c. (242 metres) that I heard to-night (January 2). They were giving some choral music, followed by a jazz tune. An announcement was made at 9.10 p.m., but this I could not catch. "God Save the King" was then heard, and they closed down. I heard this on a seven-valve all-electric set at good strength, but very distorted. —"Dynamic" (Lower Hutt).

HAS any listener ever heard plain English from Japanese stations? If so, from which stations? Is there any such station as 4ZC? I had a station very faint on December 14, at 7.30 p.m., on 300 metres, playing dance music. The call sign sounded like the above.—Universal Five (Ladbrook).

I HAVE have a crystal set, and for quite a number of evenings after 2YA closes down, I have picked up a voice from somewhere. Last night, January 1, after 2YA had signed off, I heard the following items: 1. At 11.25 p.m., "Roamin' in the Gloamin'" sung by a Scotch voice. 2. 11.30 p.m., "Wedding of the Painted Doll." 3. 11.35 p.m., Band item, "The Whistler." 4. 11.40, Tenor solo, "Lay My Head Beneath a Rose."—D. McLaughlan (Karori).

ABOUT 1 o'clock on the morning of November 18, I tuned in a station on wavelength approximately 230 metres (9 on my dial). I get 2YB, 244 metres on 12. I heard the announcer, a lady, closing down quite plainly, saying: "This is station 3LG, Newport." Have any readers heard this station? On the same evening at the same time, and again on December 23 at the same hour, I heard two stations very weak on speaker, approximately 235 and 240 metres, but could not get the station call, although the lower one of the two sounded like two letters and then 3AC (for instance, ZL-3AC). Would it be possible to get the Christchurch Amateur ZL-3AC on the broadcast band? (No, unless by reflection.—Tech. Ed.) I have heard this station very clearly on a crystal set. I also get a Jap. right on 2LO's wavelength, or rather, a fraction below, going fairly strong at same time as 2LO. Would this be JOCK on 370 metres? There are three other Japs., one 2 degrees below 2BL, one 2 degrees below 2YA, and one 1½ degrees below 4QG. Could anyone tell me the names of these stations? Is there a book with complete list of all foreign stations with operating hours for New Zealand time? If not, could you give me some idea as to when to look for them? I am more or less a novice and have not yet had any American stations. I would also like to know if a moving coil speaker is suitable for DX work? Mine seems to bring in a terrible lot of static, or is this usual for this time of year.—"Westrad," (Woolston).

[Dynamic speakers are quite good for D.X. work. Static is the order of the day during the summer.—Tech. Ed.]

How to Enjoy Your Holidays

The Railway Holiday Booklet contains glad tidings—it tells of how to reach all the delightful places you have longed to visit, with a maximum of comfort and a minimum of cost. Call, write, or 'phone for a copy—obtainable free at any Railway Station or City Booking Office.

Remember—Cheap Tickets are obtainable from 13th December to 11th January. Return up to 8th February.

Howling Valve Nuisance

DX Listeners Blamed

A MEMBER of the Wellington Radio Society, at their recent meeting, condemned the practice of certain papers in encouraging D.X. work. He affirmed that this was only stimulating the "howling valve" nuisance. He said that this caused the air to be filled with the shrieks of oscillating valves, and one could not listen in peace to even one of the "outside" YA stations without being inflicted with a continual "procession of prowling howlers" passing by in quest of long-distance stations." Another member expressed the opinion that it was not the "prowlers" who were so obnoxious, but it was the "howler" who settled on one station and howled there continuously.

Coming from a member of a society of more or less enlightened listeners we consider the statement very much out of place. In the first place what constitutes D.X. work? According to the speaker it is listening to the outside YA and Australian stations where, through the careless manipulation of their sets they cause annoyance. D.X. work is almost entirely confined to the small Australian and the big Americans to whom not one listener in 10,000 listens to for musical entertainment. Those interested in D.X. work do not remain on the larger stations, consequently they must be exonerated from the blame of causing a menace to the listening public.

D.X. indicates "long-distance" and this means a fairly large receiver which can get the main stations without any difficulty. The howling valve nuisance is created by the owners of one, two and three-valve receivers, particularly the one-valvers. Sets which cannot get Christchurch without constantly oscillating must be very small and as such cannot participate in D.X. work.

Beat Note Frequency

A Reception Incident

A CHRISTCHURCH correspondent records what appeared to him to be a unique happening. The two local stations, 3YA and 3ZC were broadcasting simultaneously, the former on 306 metres (980 k.c.), and the latter on 250 metres (1200 k.c.). Then he began to turn the dial to tune in to 2YA. Just before reaching 2YA mark he again heard what appeared to be a new station. The reception was clear but not overstrong, and the carrier wave was modulated by the transmission of 3YA and 3ZC.

The probable explanation, according to the chief engineer of the Broadcasting Company, to whom the incident was referred, is that the second harmonic of 3YA was causing a 760 k.c. beat with 3ZC's fundamental of 1200. This beat note, therefore, would appear slightly below 2YA's wave.

Radio News from America

Several Stations Identified

THE following letter from an American radio enthusiast contains much useful information concerning American stations, and should prove particularly interesting to short-wave amateurs: "I have just received a copy of the 'Radio Record' (the first I have ever seen) from a friend. I am very much interested in short-wave reception, especially short-wave broadcasting, and I like the short-wave news in the 'Radio Record.' I notice in the issue I have (September 27, 1929) a letter in the D.X. Club column from Mr. J. Riach, of Central Otago, in which he says he received a station 'somewhere in Kentucky, U.S.A.', and the call letters were WCKY. He wishes to learn the address. This station is owned by L. B. Wilson (Incorporated), located at Covington, Kentucky, U.S.A., and uses a power of 10 kilowatts on a wavelength of 1480 kilocycles, or 202 metres. Also a letter from Arthur E. Allen, Avondale, who reports reception of station WOW, Cincinnati, Ohio. He is mistaken about the call letters, as there is no WOW here in Cin. The station he heard was undoubtedly WLW in Cincinnati, owned by the Crosley Radio Corporation, Cincinnati, Ohio. This station uses a power of 50 kilowatts on a wavelength of 428 metres (1480 k.c.).

"I would like very much to correspond with any readers of the 'Radio Record' desiring to do so. I could perhaps assist any readers in all matters pertaining to U.S. stations. I am very keen on short-wave reception, and for this purpose use a four-valve short-wave receiver. During the past year I have logged about 40 stations, including Mexico, XDA; in Germany, DHC and DIH; in Costa Rica, NRH; in England, G5SW, GBU and GBS; also the Bridgewater and Bodmin beam stations. I have also heard Nancy, France, 14.43, and Monte Grande, Buenos Aires, on two frequencies. Several U.S. trans-Atlantic 'phones and VK-2ME, Sydney, and several I have never been able to identify. The weather is cold here now (8 below zero), and short-wave reception is not at its best at the present time. Hoping to hear from some New Zealanders. —I am, etc., Fred Easter, 3353 Cincinnati, Ohio, U.S.A."

Development in Europe

THE scheme for reorganising broadcasting in Switzerland provides for the installation of a special telephone cable system in order to link up all transmitters, to permit of simultaneous transmissions. New studios are also to be built at Montreaux and Neuchatel, as well as at other important centres.

IT is stated in Rome that when the Vatican station is in regular operation, an attempt will be made to relay religious services from St. Peter's (Rome) and from the Sistine Chapel; should this prove successful, broadcasts will be made on important Roman Catholic holidays.

Notes and Comments

By SWITCH

LISTENERS unfamiliar with the history of broadcasting will be interested to know that in June, 1920, the Marconi Company gave the first actual broadcast concert at Home from their experimental valve-transmitting station at Chelmsford, England. Among the performances on that famous occasion was the great Australian prima donna, Dame Nellie Melba, whose voice was heard a considerable distance across the Atlantic and in many parts of Europe. What wonderful strides have since been made in broadcasting!

A RECENT cable message published in the New Zealand press announced that Frances Alda, the New Zealand prima donna, was retiring from the stage. The New York "Radio World," just to hand, states: "At the end of the season, Mme. Frances Alda, noted operatic and concert soprano, will retire from the Metropolitan Opera Company, and devote her entire time to radio broadcasting. After twenty-one years on the operatic stage," said Mme. Alda, "I am giving up work with the Metropolitan to devote my time entirely to broadcasting. The first of six Puccini operas was recently broadcast. It was 'Madame Butterfly.' Mme. Alda sang the role of Japanese sweetheart to the American naval officer."

THE "talkie" relays by 2YA, Wellington, from the Majestic Theatre, Wellington are really excellent. The enunciation of the screen artists is cleanly put across from 2YA, and one can hardly credit that the enactments are not taken from a stage performance in the living flesh or from a film and loudspeakers. One cannot help noticing, too, the advance in the technical skill of voice production by the "talkie" producers.

RADIO possibly made and saved fortunes during the recent panic on the New York share market. The mail brings news that the recent New York stock market break so taxed the facilities of radio transmitting stations sending special messages to brokers and stock owners aboard the ships, that the day and night operators were forced to operate on 12-hour shifts to put all the messages through.

HERE is some trenchant criticism which appeared recently in the Melbourne "Argus":—Listeners must have been distressed by a distasteful innovation in the programme broadcast from 3LO last night. Some nameless person exchanged cheap patter with the announcer between the different items. Nothing more effective could have been designed to destroy whatever was good in the programme. One of these 'comic' interludes preceded the playing of the movements from the second Beethoven quartet. The patter was in the worst of taste, and a flippant gesture in the face of the Beethoven music, which, however, was ably played by the Australian Broadcasting Company's string quartet. A repetition of cheap patter broke in upon the last note of the slow movement, and served as an introduction to the most exquisite of Shakespeare's songs, "Come Away, Death." Newstead Rush sang the song well. It is incredible, but after the Shakespearian song the anonymous comedian asked the announcer, "Why does a Chinese baby make more noise than any other?" And listeners were presumably expected to laugh when he was told: "Because it's a little 'yeller.'"

WHEN atmospheric conditions become more favourable for long-distance reception one may expect to hear of many New Zealanders picking up some of the super-power American stations which have recently come on the air. The new 50,000 watt transmitter of WFAA, which is located eighteen miles northwest of Dallas, Texas, is now on the air. This transmitter, built at a cost of 270,000 dollars (£54,000), is the South's first high power broadcaster. The frequency of 800 kilocycles (374.8 metres) is used.

THE recent relay by 2YA, Wellington, of the concert from Otaki was a pronounced success. The Maori items were particularly pleasing, and came through well. One speaker caused amusement among radio folks by opening his remarks with "Ladies and gentlemen, and listeners-in." Of course the gentleman did not desire to convey that listeners-in were not ladies and gentlemen, but the joke got across splendidly, especially on account of its innocence. These relays, if only on account of the variety they afford, are immensely popular with listeners, and there is the psychological effect created by a theatre audience which enhances the popularity of relays.

THAT the New Zealand authorities were wise in keeping a strict control over indiscriminate advertising by radio, and the limiting of broadcast stations in the various centres is increasingly apparent. The New York "Radio World" reports that, "Too many broadcasting stations and too much advertising are the leading complaints of radio listeners in the vicinity of San Francisco concerning the ills of radio to-day, according to a survey made by the Commonwealth Club of America in San Francisco, the results of which were transmitted to the Federal Radio ommission. It is one of the first such surveys to be made."

RECEPTION from the Australian stations has continued bad for several weeks, and this has synchronised with the abnormal sunspot activity reported by astronomical observers. Strangely enough, the sunspots have coincided also with exceptionally stormy conditions in both the northern and southern hemispheres. During past years "Switch" was able to obtain very fair reception of four of the Australian stations for the hour preceding the ushering in of the New Year, and has followed the event from New Zealand to Adelaide, but this year the Australian stations were only very faintly audible.

DESPITE the unfavourable atmospheric conditions which have reduced the Australian stations to the faintest whisper, it is strange how on occasional nights lately 2BL, Sydney, has managed to come through with fair audibility after 11 p.m. There is, naturally, considerable fading, but, nevertheless, 2BL has been sufficiently loud to provide entertainment for those who have stayed up late. This has occurred when even 2FC, Sydney, and the "B" class stations which sometimes push through under adverse conditions, were inaudible.

BEDLAM seemed to have broken loose in the G.P.O. square when the New Year commenced, as heard by means of the capital relay by 2YA, Wellington. The microphone was located in the G.P.O. tower, overlooking the square. There was no lack of enthusiasm on the part of the crowd when the Old Year slipped away, and the Boys' Institute Band added to the festivities with appropriate items. It was thoughtful of the 2YA director to keep the station on the air until 1 a.m., and the cheerful musical items were appreciated in many homes.

AN example of the national character of broadcasting was provided recently when Sir Joseph Ward broadcast a speech, or rather a New Year's message, to the people of New Zealand per medium of a relay by 2YA, Wellington. The Prime Minister, who is recovering from a severe illness, was seated in his residence at Heretaunga, which is about 14 miles air-line from the 2YA broadcast station. The message was re-broadcast by 3YA, Christchurch, and was heard throughout the Dominion.

THE latest mail from Australia brings news that the existing broadcast transmitters at 5CL, Adelaide, and 4QG, Brisbane, are shortly to be superseded by more efficient transmitters. The new 5,000-watt equipment for 5CL is almost completed, while the new transmitter for Brisbane is now being constructed. Reception from 4QG should be greatly improved in New Zealand when the new plant is installed. Even with the old transmitter during certain periods of the year 4QG is heard louder in Wellington than any other trans-Tasman station.

THE largest and most powerful station in the world, built and established so far is at Rugby, Warwickshire. It covers an area of 1000 acres. Eighty large transmission valves are used. Each one of these consumes more than 1000 times the electrical energy of the ordinary wireless receiving valve. Twenty-five miles of wire for the aerials are suspended between twelve great steel masts, each 400 yards apart. Each one of these huge lattice-work structures is six times as high as the Nelson Column in Trafalgar Square. There is a lift inside each mast to carry electricians and other workmen to the top. This station is for simultaneous broadcasting to all parts of the British Empire.

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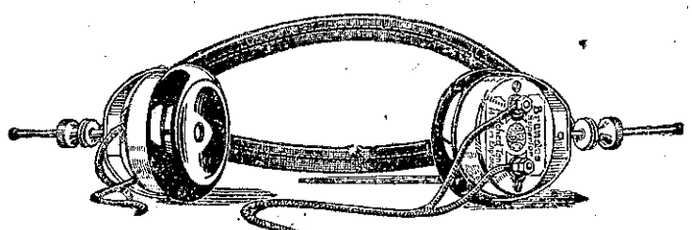

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Next Week's Features

1YA *Features*

THE service in St. Andrew's Presbyterian Church (the Rev. Ivo Bertram, preacher) will be broadcast on Sunday evening. A concert, to be given by the Auckland Municipal Band in Albert Park, will follow.

A FINE programme has been arranged for classical night, Tuesday. In addition to excellent vocal and instrumental music, there will be two sketches and a half-hour's review of the latest records. The vocalists will be Madame Mary Towsey, Miss Audrey Holder, Miss Aimee Clapham, Mr. John McDougall and Mr. John Bree. Two numbers will be sung by Madame Mary Towsey's quartet. Violin solos will be played by Miss Ina Bosworth and selections by the Studio Trio.

MR. NORMAN KERR will give a further talk on Wednesday evening on "Physical Culture." On Wednesday evening the Orchestral Octet, under Mr. Eric Waters, will play two Strauss numbers—a selection from "Der Rosenkavalier," and "Where the Citrons Bloom." Also to be played will be the "Danse Macabre," and three light pieces by Somervell, and a selection comprising the latest novelties. Pianoforte solos will be played by Miss Cherry Anderson. One of these will be a medley of popular tunes, her own arrangement. Mrs. B. Jellard and Mr. Roger Errington will be the vocalists. Elocutionary items will be given by Mr. A. McSkimming. The records will include a solo by Dusolina Giannini, choral selections and items.

THE first of a series of talks to be given under the auspices of the League of Nations will be given on Thursday evening by Mr. Bernard Martin. Thursday evening's programme will be of the novelty order. The Minus Fives will contribute a new budget of comedy and gaiety, in the presentation of which they will be assisted by the Clarsax Duo, instrumentalists.

MISS PHYLLIS HAZELL and Mr. Ernest Snell will be the vocal soloists on Friday evening. Miss Hazell's items will be "Over The Dreamland Sea," "Beloved" (from "Over the Rim of the Moon"), and "In Questa Tomba." Mr. Snell will sing "I am Fate," "To Anthea," and "The Bitterness of Love." Miss Molly Wright (celliste) will play "Tarantelle" and two flute solos will be played by Mr. George Poore. Further instrumental numbers will be contributed by the Studio Trio and by special records.

MISS LYNDA MURPHY, elocutionist, Mr. A. Fogerty (tenor), Mr. Fred Baker (baritone), The Snappy Three, the Orchestral Octet, under Mr. Eric Waters, and some specially selected records, including novelty items, will contribute to Saturday evening's programme.

MISS MARY LENNIE

Is a talented young pianiste from the studio of Mr. Gordon Short, and is also the official pianiste to the Wellington Amateur Theatrical Society. She has also acted in a similar capacity to the Wellington Orpheus Society.

—S. P. Andrew, photo.

MISS MOLLIE FENTON

Is one of Wellington's most artistic mezzo-contraltos, and a singer well and favourably known to 2YA listeners. A pupil of Mrs. G. A. Ginn, one of Wellington's leading teachers, Miss Fenton's singing is noticeable for its sincerity.

—S. P. Andrew, photo.

2YA *Features*

ON Sunday afternoon 2YA will broadcast a concert to be given in the Basin Reserve by the Combined Bands Association. On Sunday evening the service of the Vivian Street Baptist Church will be relayed, the preacher on this occasion being the Rev. F. E. Harry, the choirmaster, Mr. J. R. Samson, and the organist, Mr. Chas. Collins. At the conclusion of the service the Wellington Municipal Tramways Band, under the conductorship of Mr. E. Franklin, will give a studio concert. The band will be assisted by Miss Mary Bald (contralto), Mr. E. W. Robbins (tenor), and Mr. Peter Connell (baritone).

AT 7.40 on Monday evening Mr. Walter F. Dudson, an expert dietitian, will give a talk on "Rheumatism and Neuritis."

An interesting programme of a classical nature will be given on Monday evening. The 2YA Orchestrina, under Signor A. P. Truda, will play the overture to Weber's "Der Freischutz," the "Andante" from Lalo's "Symphonie Espagole," the "Adagio" from "Moonlight Sonata," Saint-Saens' "Danse Macabre" and Godfrey's arrangement of "Reminiscences of Grieg." The assisting vocalists will be Mrs. W. J. Goodson (soprano), Miss Hilda Chudley (contralto), Mr. Clifton Williams, of Auckland (baritone), and Mr. Frank Amoore (tenor). Miss Rose Carte will entertain with dramatic and humorous recitations.

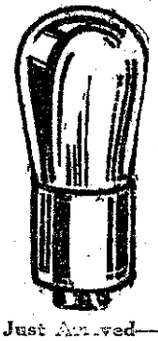
TUESDAY evening's programme will be of a light popular nature. The Salon Orchestra under Mr. Mat Dixon will play as an overture Friedmann's "Slavonic Rhapsody," Squire's "Slumber Song," Czibulka's "Serenade," an excerpt from the "Coppelia Ballet Music," and "Three Light Pieces" by Somerville. The assisting vocalists will be Miss Pearl Telfer (mezzo-soprano), Mr. Harry Matthew (baritone), and Mr. Spencer Furrell. Mr. Hedley Aitken will be heard in humorous recitals.

ON Thursday afternoon Miss Flora Cormack will give another of her interesting talks on "Fashions" and others matters of interest to the ladies. Miss Cormack on this occasion will discuss "Filmland's Fashion Forecast in Daytime Dress Modes."

The concert session on Thursday evening will be provided by the Wellington Municipal Tramways Band, under the conductorship of Mr. E. Franklin. The band's items will comprise the overture "Zamberflott," by Mozart, a cornet solo by Bandsman Stevenson, a trombone solo by Bandsman Tallantyne, several marches and waltzes, and the humoreske, "McGregor's Wedding." The assisting artists will be Mrs. Gwendoline Barlow (soprano), Mr. Cyril McCheyne (baritone), Miss Ivy Stanton (contralto), and Mr. Harry Phipps (tenor). Mr. Ken Aitken, a popular entertainer from Levin, will give a dramatic and a humorous recitation in his own inimitable style.

FRIDAY evening's programme will consist of excerpts from grand opera and musical comedy by the 2YA Orchestrina and the Philharmonic Quartet. The Orchestrina will play the overture, "Knight Errant," a selection from "Samson and Delilah," "The Huguenots," "The Little Dutch Girl" and Ponchielli's "Dance of the Hours." The Philharmonic Quartet's items will comprise vocal numbers from "Faust," "La Boheme," "The Maid of the Mountains," "The Country Girl," and "Merrie England." The lighter side of the programme will be in the capable hands of Mr. and Mrs. Albert Russell, whose merry quips and jests are enjoyed by such a large number of listeners.

ON Saturday, January 18, the station will be on the air at noon in order that results of the first day of the Wellington Racing Club's summer meeting may be made available to listeners. At 7.40 Mr. W. M. Jackson, the well-known gladiola expert, will give a talk on "Gladioli and Gardening Hints."



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BOX 395 :: :: CHRISTCHURCH.

The concert session programme on Saturday evening will consist of a bright vaudeville entertainment provided by the Salon Orchestra, the Melodie Four, the Berthold and Bent Steel Guitar Duo, and Mr. Will Yates, who, with Mrs. Lightbody, will provide the humour of the evening.

3YA Features

SUNDAY afternoon will be devoted to a rebroadcasting of 2YA—a concert by massed bands in the Basin Reserve. The evening church broadcast will be from the Oxford Terrace Baptist church, the preacher being the Rev. J. Robertson. A studio concert will follow, contributed to by Mrs. Wilfred Owen (mezzo-soprano), Mrs. Graham Jamieson (mezzo-contralto), Mr. L. C. Quane (tenor), Mr. R. Lake (baritone), and Miss Dorothy Davies (pianiste).

A REVIEW of the December issue of the "Journal of Agriculture," in which there is much valuable information for the man on the land, will be given on Monday evening at 7.30.

MR. William Yates, a very popular reciter at 2YA, will appear on Monday evening when the programme is to be given by the Woolston Band and 3YA vocal artists. Conductor R. J. Estall has arranged a very attractive programme for his band and cornet and horn solos will be played by Bandsmen R. Ohlsen and F. Turner respectively. The singers will be Miss Betty Sutton, Miss Khura Hart-Stewart, Mrs. E. H. Davies and Mr. E. A. Dowell.

THE Studio Octet, under Mr. Harold Beck, in association with the Salon Quartet, will provide Wednesday evening's programme. A number of popular operatic numbers will be included. The instrumental items will be bright and well varied. The vocal numbers will comprise duets and quartets as well as solos. Miss Mary O'Connor will sing "Adieu Forets," from Tschaikowsky's opera "Jeanne D'Arc." One of Dulcie Mitchell's songs will be "My Ships." "Eleanore" will be sung by Mr. H. Blakeley, and the popular "Floral Dance" will be one of Mr. Graham Young's songs.

ON Thursday evening, at 7.30, there will be a talk to farmers by Mr. W. Montgomery, of the State Forest Service.

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QUICK RELIEF

MR. and Mrs. J. W. Bailey, the popular radio sketch artists, will appear on Friday evening's programme in three entertaining sketches. There will also be recitations by Mr. W. H. Moses. Songs will be sung by Mrs. Maud Wood, and Mr. A. G. Gladstone Brown. Throughout the concert programme and until 11 p.m. dance music will be played by the Bailey-Marston Dance Orchestra.

MISS Dora Gray, well known as a broadcaster from 2YA, will be singing on Saturday evening, when a light vaudeville programme will be presented. The vocalist will be Mr. Leslie Fleming, baritone, singing "La Paloma," "Mother England's Brewing," and "Nancy Lee." The popular Chatterboxes concert party will provide two twenty-minute entertainments of mirth and melody consisting of sketches and songs. Further humour will be dispensed by Mr. George Titchener, and bright instrumental music will be played by Miss Irene Morris (violiniste) and the Studio Trio.

4YA Features

CANON NEVILL will be the preacher at St. Paul's Cathedral on Sunday evening, when the service is to be broadcasted. A relay of the after-church concert, to be given in 3YA Studio, will follow.

THE first half of Monday evening's programme will consist chiefly of a presentation of the well-known musical comedy "Florodora," the principal excerpts from which will be sung by the 4YA Harmonists—Miss Mae Mathieson, Miss M. S. Green, Mr. H. A. Johnson and Mr. F. M. Tuohy. A trio, consisting of Misses Wallace, Smith and Baker, will play a selection from the play. The same trio will also play "Danse Macabre," "Liebestraume" and a piece by Beethoven. There will be supplementary solo numbers by the instrumentalists and by the vocalists.

A broadcasting programme to stir the blood of lovers of bagpipe music will be presented on Tuesday evening by the Dunedin Highland Pipe Band. A wide selection of items will be played, including the beautiful "Road to the Isles." The soloists for the evening will be Miss Aileen Young, Miss Mary Somerville and Mr. G. M. Salmond. Miss Tui Northey will recite, one of her items being a selection from Jerome's amusing "Three Men in a Boat."

ON Wednesday afternoon there will be a talk to women on "Common Problems of Bottling." This lecture has been arranged by the 4YA Primary Productions Committee. In the evening there will be a talk to farmers by Mr. N. K. Dallas on "Frost Control in Orchards."

WEDNESDAY evening's programme will be of a miscellaneous and bright nature. Contributing will be the Novelty Instrumental Trio, in fox-trots and waltzes. The Scottish comedian, Mr. Buster Brown, will render Lauder numbers. There will be songs by Miss Stasia McCready (soprano), and the Rev. L. North (baritone). Miss N. Warren will recite.

ON Friday evening some of the popular negro spirituals will be sung by Miss Ida Lungley, contralto, who has lately given several fine performances at 4YA. Also singing will be Miss Rae Stubbs (soprano), and Mr. A. W. Alloo (baritone). There will be recitations by Miss Nellie Osborn, while instrumental items will be played by the 4YA Broadcasting Trio.

ON Saturday evening 3YA's programme will be relayed by 4YA.

Children's Session

AT 2YA.

MONDAY, January 13. This will be Aunt Gwen's last evening at 2YA, because she is going away to live in Sydney; so everyone in Radioland must listen in to-night.

TUESDAY. Uncle Jim to-night, with Cousin Eva. She will sing, and some other little cousins will also sing and recite.

THURSDAY. Cousin Joyce will play to-night on the vibraphone, and Cousin Meryl will sing and give a musical monologue. Uncle George will send out the birthday greetings.

FRIDAY. The pupils of Mrs. Bernasconi to-night. They will give us merry music. Cousin Betty has more new poems for Radioland. Brother Jack will send greetings and Robinson will crow his crow of welcome.

SATURDAY. Cousin Roma will be welcomed again. She will have many good things in store. Cousin Eileen, a new cousin, is coming to sing, and Uncle Toby will be present.

SUNDAY. The children's song service will be conducted by Uncle George, assisted by the Cambridge Terrace Congregational Sunday School Choir under Mr. Reynolds.

Unusual Loudspeakers

An American Invention

PILLOWS, photographs, vases and wall hangings as loudspeakers are the latest thing in radio, developed by a Washington inventor, who has been experimenting to do away with old-style loudspeakers. These ingenious reproducers, which harmonise with other room furnishings and decorations, have been made possible by a new type of speaker unit.

The individual unit, which may be made in many different forms, is said to operate on the condenser principle. In speakers of this type the vibration is caused by the variations in attraction between two conducting bodies when they are subjected to considerable differences in electrical potential. In the new design layers of conducting and non-conducting paper are subjected to the varying voltage that represents the music or speech at the output of the radio receiver. The non-conducting paper is, of course, made of ordinary pulp fibre, while the conducting sheets are rolled from pulp that has been impregnated with metallic dust.

A Novel Innovation

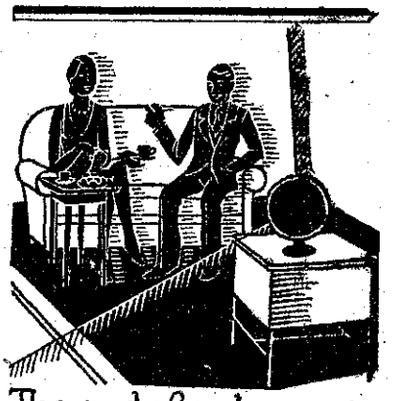
School Equipment

A LOUDSPEAKER in every classroom, bringing to the students important radio programmes from a central radio receiver, or, at other times, messages direct from the principal; a cafeteria equipped with speakers that furnish music for the pupils at lunch time; and an auditorium in which the entire school may enjoy such programmes in a body—these are innovations in a new high school at Great Neck, New York.

In the principal's office is an elaborate switchboard that connects directly with loudspeakers throughout the building. Merely by throwing a switch the principal may tune his students in on whatever programme he thinks would benefit them. In this way the students can hear important public lectures and symphony concerts.

On the principal's desk is a microphone connected with the switchboard. When he wishes to issue instructions or announcements to classes he may simply throw another switch and speak through the "mike" directly.

Radio programmes are supplemented by gramophone music transmitted along the same wires in the school to the huge loudspeakers in the cafeteria. Thus, when a suitable programme may be picked up over the radio, it is used; otherwise the gramophone plays selected music.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Full Programmes for Next

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Sunday, January 12

1YA, AUCKLAND (900 KILOCYCLES)—SUNDAY, JANUARY 12.

3.0 : Afternoon session—Selected studio items.
4.0: Literary selection by the announcer.
4.8: Studio items.
6.0: Children's session conducted by Uncle Leo.
6.55: Relay of service from St. Andrew's Church. Preacher: Rev. Ivo Bertram. Organist: Dr. Neil McDougall.
8.30: (approx.): Relay from Albert Park of concert by the Auckland Municipal Band under the conductorship of Mr. Christopher Smith.
9.45: Close down.

2YA, WELLINGTON (720 KILOCYCLES)—SUNDAY, JANUARY 12.

2.45: Relay from Basin Reserve of concert by Wellington Combined Bands Association in aid of Wellington Free Ambulance.
6.0: Children's song service conducted by Uncle George.
7.0: Relay of service from Vivian Street Baptist Church. Preacher: Rev. F. E. Harry. Organist: Mr. Chas. Collins. Choirmaster: Mr. J. R. Samson.
8.15 (approx.): Studio concert by the Wellington Municipal Tramways Band, and assisting artists:—
Hymn—Band, "O God Our Help in Ages Past" (Dyke).
Overture—Band, "The Bohemian Girl" (Balfe).
Contralto—Miss Mary Bald, "Crossing the Bar" (Jarman).
San Francisco Symphony Orchestra—"Rosamunde—Entr'acte" (Schubert), (H.M.V. D1568).
Tenor—Mr. E. W. Robbins, recitative and aria, "Comfort Ye" and "Every Valley Shall be Exalted" ("Messiah"), (Handel).
Pianoforte—Mischa Levitski, (a) "La Campanella" (Paginini-Liszt); (b) "Staccato Etude" (Rubinstein), (H.M.V. D1489).
Baritone—Mr. Peter Connell, "O Song Divine" (Temple).
Waltz—Band, "Lolita" (Lithgow).
Weather report.
Choral—B.B.C. Choir, (a) "Pilgrims' Chorus" ("Tannhauser"); (Wagner); (b) "Grand March" ("Tannhauser"), (Wagner).
Contralto—Miss Mary Bald: (a) "Irish Lullaby" (Needham); (b) "At Dawning" (Cadman).
Selection—Band, "Euryanthe" (Weber).
Tenor—Mr. E. W. Robbins: (a) "Ships of Arcady" (Head); (b) "For You Alone". (Geehl).
J. H. Squire Celeste Octet, "Polonaise—Mignon" (Thomas).
Baritone—Mr. Peter Connell, "Beloved, It is Morn" (Aylward).
Hymn—Band, "All People That On Earth Do Dwell" (Trdtl).
March—Band, "Old Comrades" (Teike).
Close down.

3YA, CHRISTCHURCH (980 KILOCYCLES)—SUNDAY, JANUARY 12.

2.45: Rebroadcast of 2YA Wellington (relay from Basin Reserve of concert by Wellington Combined Bands Association).
5.30: Children's song service (children of Baptist Sunday Schools).
6.15: Chimes from Studio.
6.30: Studio programme:
Piano and orchestra—Arthur de Greef and Royal Albert Hall Orchestra, "Hungarian Fantasia" (Liszt) (H.M.V. D1306-7).
6.46: Negro spirituals—Paul Robeson (a) "Scandalise My Name" (Burleigh), (b) "Sinner, Please Doan' Let Dis Harves' Pass" (Burleigh), (H.M.V. B2771).
6.54: Instrumental—Victor Olof Sextet, (a) "To a Water Lily"; (b) "To a Wild Rose"; (c) "In Autumn" (Macdowell) (H.M.V B2690).
7.0 : Relay of service from Oxford Terrace Baptist Church—Preacher: Rev. J. Robertson, M.A. Organist: Mr. Melville Lawrie. Choirmaster: Mr. K. G. Archer.
8.30 (approx.): Studio Concert:
Prelude—New Light Symphony Orchestra, "Prelude in G Minor" (Rachmaninoff) (Zonophone EF24).
8.33: Mezzo-contralto—Mrs. Graham Jamieson, (a) "The Moon Drops Low" (Cadman); (b) "The White Dawn is Stealing" (Cadman).
8.38: Baritone—Mr. R. Lake, "The Two Grenadiers" (Schumann).
8.41: Pianoforte—Miss Dorothy Davies, "Rhapsody in C" (Doblinger).
8.50: Mezzo-soprano—Mrs. Wilfred Owen, (a) "Come and Find the Quiet Places" (Coningsby Clarke), (b) "Rest at Midday" (Hamilton).
8.56: Tenor—Mr. L. C. Quane, "All Hail Thou Dwelling" (Faust) (Gounod)
9.0 : Violin solo—Fritz Kreisler, "Shepherd's Madrigal" (Kreisler).
9.3 : Mezzo-contralto—Mrs. Graham Jamieson, "An Old Garden" (Hope Temple).
9.7 : Baritone—Mr. R. Lake, (a) "Sacrament" (MacDermid); (b) "How Fair Art Thou My Lovely Queen" (Brahms).
9.13: Instrumental—Christchurch Broadcasting Trio, "Trio in G Major—(a) Andante; (b) Poco Adagio; (c) Rondo all Ongarese" (Haydn).
9.27: Mezzo-soprano—Mrs. Wilfred Owen, (a) "Oft in the Stilly Night" (Irish air), (b) "Where'er You Walk" (Handel).
9.37: New Light Symphony Orchestra, "Prelude in C Sharp Minor" (Rachmaninoff) (Zonophone EF24).
9.40: Close down.

4YA, DUNEDIN (650 KILOCYCLES)—SUNDAY, JANUARY 12.

3.0 : Chimes. Selected gramophone items.
4.30: Close down.
5.30: Children's song service, conducted by Big Brother Bill.
6.15: Close down.
6.30: Evening service relayed from St. Paul's Cathedral. Preacher, Canon Neville. Organist, E. Heywood, F.R.C.O.
7.45: Symphonic poem—"Les Preludes" (Liszt) (H.M.V. D1616).
8.1 : Church choir—Temple Church Choir, (a) "Praise, My Soul, the King of Heaven" (Goss), (b) "O Worship the King" (Goss) (H.M.V.).
8.7 : 'Cello solo—W. H. Squire, "Ave Verum" (Mozart) (Col. 04283).
8.11: Columbia Symphony Orchestra, "Bridal Procession" (Grieg).
8.15: Relay of concert from 3YA, Christchurch.
9.30: God Save the King.

Monday, January, 13

1YA, AUCKLAND (900 KILOCYCLES)—MONDAY, JANUARY 13.

SILENT DAY.

2YA, WELLINGTON (720 KILOCYCLES)—MONDAY, JANUARY 13.

3.0 : Chimes. Selected gramophone items.
4.55: Close down.
5.0 : Children's session, conducted by Uncle Jeff.
6.0 : Dinner Session—'H.M.V." Hour:
Selection—New Mayfair Orchestra, "Lilac Time" (Schubert—Clutsam).
Royal Opera Orchestra, "Carmen Ballet No. 1" (Bizet) (C1424).
6.12: Tacet.
6.15: National Symphony Orchestra, "William Tell" overture (Rossini).
6.27: Tacet.
6.30: Royal Opera Orchestra, "Sylvia Ballet—Pizzicato and Procession of Bacchus" (Delibes) (C1418).
Royal Opera Orchestra, "Carmen Ballet No. 2" (Bizet) (C1424).
6.42: Tacet.
6.45: Detroit Symphony Orchestra, "Spanish Rhapsody" (Chabrier) (E522).
Philadelphia Symphony Orchestra, "Nocturne No. 2—Fetes" (Debussy)
6.57: Tacet.
7.0 : News session, market reports and sports results.
7.40: Lecturette—Mr. Walter F. Dudson, "Rheumatism and Neuritis."
8.0 : Chimes.
Overture—2YA Orchestrina, under the conductorship of Signor A. P. Truda, "Der Frieschutz" (Weber).
8.9 : Soprano—Mrs. M. J. Goodson, (a) "A Blackbird Singing" (Head); (b) "Ships of Arcady" (Head).
8.16: Violin—Toscha Seidel—"Slavonic Dance No. 2 in E Minor" (Dvorak-Kreisler) (Columbia 09504).
8.20: Baritone—Mr. Clinton Williams, "Submarines" (Elgar).
8.24: Symphony—2YA Orchestrina, "Andante-Symphonie Espagnole" (Lalo).
8.34: Elocution—Miss Rose Carte, "The Story of the Faithful Soul" (Proctor).
8.41: Contralto—Miss Hilda Chudley, "I Love Thee" (Grieg).
8.45: Violin—Toscha Seidel, "Hungarian Dance No. 1" (Brahms-Joachim).
8.49: Tenor—Mr. Frank Amoore, (a) "The String of Pearls" (Phillips); (b) "Because" (D'Hardelot).
8.56: 2YA Orchestrina, "Adagio—Moonlight Sonata" (Beethoven).
9.4 : Weather forecast and announcements.
9.6 : Soprano—Mrs. M. J. Goodson, (a) "The Wood Pigeon" (Lehmann); (b) "The Wren" (Lehmann).
9.12: Lener String Quartet—"Menuetto—Quartet in D Major" (Haydn).
9.16: Baritone—Mr. Clinton Williams, (a) "Harvest Dance" (Batten); (b) "Sigh no More" (Aiken).
9.22: Dance—2YA Orchestrina, "Danse Macabre" (Saint-Saens).
9.30: Humorous recitations—Miss Rose Carte, (a) "A Cheerful Visitor" (Dallas); (b) "A Telephone Conversation."
9.37: 'Cello—W. H. Squire, "Melody in F" (Rubenstein-Popper).
9.41: Tenor—Mr. Frank Amoore, "Come Into the Garden, Maud" (Balfe).

Week-all Stations-to Jan. 19

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9.45: Contralto—Miss Hilda Chudley, (a) "A Dedication" (Franz); (b) "Your Heart Has Trembled" (Ronald).
9.51: Selection—2YA Orchestrina, "Reminiscences of Greig" (Arr. Godfrey).
10.0 : God Save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—MONDAY, JANUARY 13.

3.0 : Afternoon concert session.
4.30: Close down.
5.0 : Children's hour.
6.0 : Dinner session—"Columbia" hour:
Selection—H.M. Grenadier Guards, "Merrie England" (German).
Bournemouth Municipal Orchestra, "Idylle Bretonne" (Gennin).
6.12: Tacet.
6.15: Waltz—Jacque Jacobs Ensemble, "L'Estudiantina" (Waldteufel).
Plaza Theatre Orchestra, (a) "A La Gavotte" (Finck), (b) "Minuet" (Finck) (01439).
March—H.M. Grenadier Guards Band, "Old Panama" (Alford) (01535)
6.27: Tacet.
6.30: Ketelbey's Concert Orchestra, "The Sacred Hour" (Ketelbey) (01528).
Sandlers' Orchestra, "Someday, Somewhere" (Rapee) (01521).
Bournemouth Municipal Orchestra, "Fluttering Birds" (Gennin).
6.43: Tacet.
6.45: Musical Art Quartet—(a) Mighty Lak' a Rose" (Nevin), (b) "To a Wild Rose" (McDowell) (01506).
Sandlers' Orchestra, "Sonny Boy" (De Sylva) (01521).
March—H. M. Grenadier Guards Band, "Belphegor" (Brepsent).
6.57: Tacet.
7.0 : News and information session.
7.30: Lecturette—"Review of New Zealand Journal of Agriculture" (arranged by 3YA Primary Productions Committee).
8.0: Chimes. Band programme by Woolston Band, under the conductorship of Mr. R. J. Estall, assisted by 3YA artists.
8.1 : March—The Band, "Dunedin" (Alford). Entr'acte, "Bells of St. Germain" (Menier).
8.10: Soprano—Miss Betty Sutton, (a) "June Music" (Trent), (b) "The China Dancer" (Rolt).
8.16: Duet for two piccoloes—Bournemouth Municipal Orchestra, "Fluttering Birds" (Gennin) (Columbia 02809).
8.20: Baritone—Mr. E. A. Dowell, (a) "My Tonia" (Brown-Henderson), (b) "Old Pal" (Lewis and Young), (c) "Why Don't You Answer Me?" (Lewis and Young).
8.27: Organ—Terence Casey, "Keys of Heaven" (variations, arr. Casey) (Columbia 02842).
8.31: Mezzo-contralto—Mrs. E. H. Davies, "A Request" (Woodforde-Finden).
8.35: Fantasia—The Band, "A Sleigh Ride in America" (Jullein).
8.43: Mezzo-soprano—Miss Khura Hart-Stewart, "Pluck This Little Flower" (Landon Ronald).
8.47: Guitar—Len Fillis, "Souvenirs" (Nicholls) (Columbia 0991).
8.52: Monologue—Mr. William Yates, "Spinning a Yarn" (Middlemiss).
8.56: Cornet solo with band accompaniment—Mr. R. Ohlsen, "Nightingale Polka" (Moss).
9.2 : Weather forecast and announcements.
9.4 : Piano-accordion—Guid Deiro, "Drigo's Serenade" (arr. Deiro) (Col.).
9.7 : Soprano—Miss Betty Sutton, "Invitation" (Barry).
9.11: Selection—The Band, "Oberon" (Weber).
9.22: Mezzo-contralto—Mrs. E. H. Davies, (a) "Whatever is, is best" (Lohr), (b) "Love Planted a Rose" (Cox).
9.29: Baritone—Mr. E. A. Dowell, "The Desert Song" (Harbach).
9.33: Xylophone solo—Victor Sterling, "The Great Little Army" (Alford) (Regal G20103).
9.37: Mezzo-soprano—Miss Khura Hart-Stewart, (a) "All Joy Be Thine" (Sanderson), (b) "When the House is Asleep" (Haigh).
9.41: Horn solo—Bandsman F. Turner, "But the Lord is Mindful of His Own" (Mendelssohn).
9.46: Monologues—Mr. William Yates, "A Few Stories."
9.51: Fantasia—The Band, "A Day with Robin Hood" (Trussell).
March—The Band, "Namur" (Richards).
10.0 : God Save the King.

4YA, DUNEDIN (650 KILOCYCLES)—MONDAY, JANUAY 13.

3.0 : Chimes. Selected studio items.
4.30: Close down.
5.0 : Children's hour, conducted by Uncle Allan.
6.0 : Dinner session—"Columbia" hour:
Waltz—Symphony Orchestra, "Artists' Life" (Strauss) (02577).
Columbia Symphony Orchestra, "Al Fresco" (Herbert) (01092).
Foxtrot—La Nuova Orchestra, "Di Napoli" (Romani) (Coy. 3066).
Band—H.M. Grenadier Guards, "La Paloma" (Yradier) (0987).
6.13: Tacet.
6.15: Ketelbey's Orchestra, "In a Monastery Garden" (Ketelbey) (02688).
Waltz—Jacque Jacobs' Ensemble, "Over the Waves" (Rosas) (02556).
6.27: Tacet.
6.30: Columbia Symphony Orchestra, "Bandinage" (Herbert) (01092).
Waltz—Royal Serbian Tambouritza Orchestra, "Kossovo" (3066).
Waltz—Symphony Orchestra, "Tales from the Vienna Woods" (Strauss) (02577).
March—H.M. Grenadier Guards Band, "Twist and Twirl" (Kottaun).
6.43: Tacet.
6.45: Waltz—Royal Philharmonic Orchestra, "Blue Danube" (Strauss).
Waltz—Jacque Jacobs' Ensemble, "Espana" (Waldteufel) (02560).
6.57: Tacet.
7.0 : News and information session.
8.0 : Chimes.
Instrumental trio—Misses Wallace, Smith, and Baker, selection from "Floradora" (Stuart).
8.8 : Presentation of Leslie Stuart's musical comedy "Floradora" by 4YA Harmonists Quartet.

Cast:

Dolores ..... Miss Mae Matheson
Lady Holyrood and Angela ..... Miss M. S. Green
Abercoed ..... Mr. H. A. Johnson
Donegal ..... Mr. F. M. Tuohy

8.33: Instrumental trio—Misses Wallace, Smith, and Baker, (a) "Danse Macabre" (Saint-Saens), (b) "Liebestraume" (Liszt).
8.40: Presentation of Act II. of "Floradora."
9.0 : Weather forecast and announcements.
9.2 : Selection—Marek Weber's Orchestra, "Faust" (Gounod) (H.M.V.).
9.10: Baritone—Mr. F. M. Tuohy, "Whatever is, is Best" (Lohr).
9.14: Violin solo—Miss Ethel Wallace, "Andante and Allegro Molto Vivace" from "Violin Concerto in C Minor" (Mendelssohn).
9.25: Selection—De Groot's Orchestra, "The Merry Widow" (Lehar).
9.31: Soprano—Miss Mae Matheson, "Had You but Known" (Denza).
9.35: Piano—Miss Sybil Baker, "Toccato" (Saint-Saens).
9.40: Tenor—Mr. H. A. Johnston, "Thou'rt Like a Lovely Flower" (Schumann).
9.43: Trio—Misses Ethel Wallace, Baker, and Smith, "Allegro con Brio" from "Trio in C Minor" (Beethoven).
9.50: Contralto—Miss M. S. Green, "Ring Bells, Ring" (Day).
9.53: Orchestra—Berlin Philharmonic Orchestra, "Carnaval Romain" (Berlioz" (H.M.V. D1365).
10.0 : God Save the King.

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Tuesday, January 14

1YA, AUCKLAND (900 KILOCYCLES)—TUESDAY, JANUARY 14.

3.0 : Afternoon session—Selected items including literary selection by Announcer.
5.0 : Children's session, conducted by Uncle George.
6.0 : Dinner session—"Parlophone" Hour:
Dajos Bela Orchestra, "Voices of Spring" (Strauss) (4095).
Violin—Andreas Weissgerber, "Souvenir de Moskou" (Wieniawski).
Pianoforte—Beryl Newell, "A Precious Little Thing Called Love."
6.12: Tacet.
6.15: Tubize Royal Hawaiian Orchestra, "Moonlight in Hawaii" (2786)
Opera Comique Orchestra, "Manon" Ballet Music (Massenet) (4104).
6.27: Tacet.
6.30: Dajos Bela Orchestra, "Vienna Blood" (Strauss) (4095).
Tubize Royal Hawaiian Orchestra, "Wabash Blues" (2786).
Pianoforte—Beryl Newell, "Wedding of the Painted Doll" (Brown).
Band of H.M. Irish Guards, "Clonkerty Clonk" (2582).
6.43: Tacet.
6.45: Berlin State Opera Orchestra with Ludwig Hofmann, baritone, in the jazz opera "Johnny Strikes Up" (Krenek), and "Hymn of Johnny."
Sandon Joszi Orchestra, "The Smithy in the Woods" (Michaelis).
6.57: Tacet.
7.0 : News session and market reports.
8.0 : Chimes.
8.1 : Vocal Quartet—Madame Mary Towsey's Quartet, "Silent Night" (Barnby).
8.5 : Instrumental—Studio Trio, "Trio—3rd Movement—Serenade" (Foerster).
8.13: Contralto—Miss Aimee Clapham, "Che Faro" (Gluck).
8.18: Sketch—"Jack and Jill"—"Lucky Jim" (Simpson).
8.28: Violin solo—Miss Ina Bosworth, "Nocturne in E Flat" (Chopin-Sarasate).
8.34: Tenor—Mr. John McDougall, "Where'er You Walk" (Handel).
8.38: Pianoforte—Mr. Eric Waters, "Rigaudon" (Raff).
8.43: Mezzo-soprano—Madame Mary Towsey, "O Mio Fernando" (Donizetti).
8.47: Baritone—Mr. John Bree, "Il Balen" (Verdi).
8.51: Instrumental—Studio Trio, "The Merry Widow" Selection (Lehar).
9.1 : Weather report.
9.3 : Mezzo-soprano—Miss Audrey Holder, "Ships of Arcady" (Head).
9.7 : Sketch—"Jack and Jill"—"Fair and Warm" (Stephenson).
9.17: Baritone—Mr. J. Bree, "Sombre Woods" (Lully).
9.21: Violin—Miss I. Bosworth, "Berceuse" (Cui).
9.25: Mezzo-soprano—Madame Mary Towsey, "O Love From Thy Power" "Samson et Delilah") (Saint-Saens).
9.29: Vocal quartet—Madame Mary Towsey's Quartet, "Fair Shines the Moon" (Donizetti).
9.33: Gramophone Lecture-Recital, A Commentator, "The Latest Recordings."
10.3 : God Save the King.

2YA, WELLINGTON (720 KILOCYCLES)—TUESDAY, JANUARY 14.

3.0 : Chimes—Selected gramophone items.
4.55: Close down.
5.0 : Children's session, conducted by Uncle Jim.
6.0 : Dinner session—"H.M.V." hour:
March—American Legion Band, "The Conqueror" (Talke) (Zono. 2909).
Selection—Savoy Orpheans, "Lido Lady" (Rodgers (C1310).
6.12: Tacet.
6.15: New Light Symphony Orchestra, "Rustic Wedding Symphony" (C1210).
Victor Olof Sextet, "To a Water Lily" (Macdowell) (B2680).
New Light Symphony Orchestra, "Spanish Dance" (Moszkowski).
Wurlitzer Organ—Reginald Foort, "Just Like Darby and Joan".
6.28: Tacet.
6.30: Jack Hylton's Orchestra, "The Selfish Giant" (Coates) (C1253).
Victor Olof Sextet, (a) "To a Wild Rose"; (b) In Autumn".
Violin and Wurlitzer Organ—De Groot and Terence Casey, "Parted"
6.44: Tacet.
6.45: Victor Symphany Orchestra, "Dance of the Hours" (Ponchielli) (Zono.).
Wurlitzer Organ—Reginald Foort, "Love Lies" (Kellard) (B2775).
March—American Legion Band, "Iowa Corn Song" (Arr. Beeston).
6.58: Tacet.
7.0 : News session, market reports and sports results.
7.40: Lecturette by representative of the Agricultural Department, "For the Man on the Land."
8.0 : Chimes.
Overture—2YA Salon Orchestra under the conductorship of Mr. Mat Dixon, "Slavonic Rhapsody" (Friedman).
8.9 : Mezzo-soprano—Miss Pearl Telfer, (a) "Everywhere I look" (Carew); (b) "Tiptoe" (Carew).
8.16: Baritone solos—Mr. Harry Matthew, (a) "A Bachelor Gay" from "Maid of the Mountains" (Fraser-Simpson); (b) "Ol' Man River" from Show Boat" (Kern).
8.23: Selections—2YA Salon Orchestra, (a) "Slumber Song" (Squire); (b) "Standchen" (Czilbulka).
8.33: Humour—Mr. Hedley Aitken, "Levinsky at the Wedding".
8.40: Popular songs—Mr. Spencer Furrell, (a) "Smiling Irish Eyes" (Perkins); (b) "Flower of Love" (Axt and Mendoza).
8.47: Mezzo-soprano—Miss Pearl Telfer, "The Little Old Garden" (Hewitt).
8.51: 2YA Salon Orchestra, "Coppelia Ballet" (Delibes).
9.0 : Weather report and announcements.
9.2 : Baritone—Mr. Harry Matthew, "Five and Twenty Sailormen" (Coleridge-Taylor).
9.6 : 2YA Salon Orchestra, Request item.
9.14: Humour—Mr. Hedley Aitken, "I do Like an Egg for My Tea."
9.20: Popular Song—Mr. Spencer Furrell, "Romance," from "Desert Song."
9.24: 2YA Salon Orchestra, "Three Light Pieces" (Somerville).
9.30: "Columbia" Dance Programme:
Foxtrot—Milt Shaw's Orchestra, "Walking with Susie" (Gottler).
Foxtrot—Fred Rich's Orchestra, "Used to You" (De Sylva) (01565).
Foxtrot—Milt Shaw's Orchestra, "Breakaway" (Gottler) (01553).
Foxtrot—Fred Rich's Orchestra, "Why Can't You?" (De Sylva) (01565).
9.42: Hawaiian—Lizzie Alohikea and chorus, "Nani Kauai" (Alohikea).
Foxtrot—Debrow Somers' Band, "The Egg Song" (Salisbury) (01523).
Foxtrot—Harry Reser's Syncopators, "I'm Wild about Horne on Automobiles" (Gaskill) (01543).
Foxtrot—Ted Wallace and his Campus Boys, "Jericho" (Meyers)
One-step, Debroy Somers' Band, "Shinaniki Da" (Carlton (01523).
Waltz—The Cavaliers, "Lady Divine" (Shilkret) (01543).
10.0 : Organ solo—Milton Charles, "Love's Old Sweet Song" (Molloy (01161).
Foxtrot—Don Voorhees's Orchestra, "Ol' Man River" (Kern) (01406).
Foxtrot—Ted Wallace and his Campus Boys, "I've Got a Feeling I'm Falling" (Link) (01586).
Foxtrot—Don Voorhees' Orchestra, "Can't Help Lovin's dat Man".
Foxtrot—Andy Sannella's All Star Trio, "Perfume of Roses" (Donovan).
10.15: Vocal duet—Layton and Johnstone, "Carolina Moon" (Davis) (01550).
Foxtrot—Ernie Golden's Orchestra, "She's Got Great Ideas" (Tobias).
Foxtrot—Piccadilly Players, "I Lift up my Finger and say Tweet Tweet" (Sarony) (01595).
Foxtrot—Ernie Golden's Orchestra, "That's Her Now" (Ager) (01559).
Waltz—The Cavaliers, "Underneath the Russian Moon" (Gusman).
10.30: Organ solos—Milton Charles. (a) "From the Land of the Sky-Blue Water," (b) "At Dawning" (Cadman) (01161).
Foxtrot—Ray Starita and his Ambassadors' Band, "Wake up, Chill'un, Wake Up!" (Trent) (01595).
Foxtrot—Hal Swan's Cafe Royal Band, "Me and the Man in the Moon".
Foxtrot—Andy Sannella and his All Star Trio, "I'll See you Through".
Waltz—Eddie Thomas' Collegians, "Billie" (Henderson).
10.45: Hawaiian—Lizzie Alohikea and chorus, "Liliu E" (Kaulia) (01282).
Tango—Anson Weeks' Orchestra, "Senorita" (Weeks) (01584).
Foxtrot—Paul Whiteman's Orchestra, "Get Out and Get Under the Moon" (Shay) (07001).
Foxtrot—Corona Dance Band, "I Faw Down an' go Boom" (Brockman).
Foxtrot—Paul Whiteman's Orchestra, "Evening Star" (Turk) (07001).
Waltz—The Cavaliers, "Bye and Bye, Sweetheart" (Valentine) (01546).
Reel—O'Leary's Irish Minstrels, "Turkey in the Straw" (Regal).
11.0 : God Save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES).—TUESDAY, JANUARY 14

SILENT DAY.

4YA, DUNEDIN (650 KILOCYCLES)—TUESDAY, JANUARY 14.

3.0 : Chimes. Selected gramophone items.
4.30: Close down.
5.0 : Children's hour.
6.0 : Dinner session—"H.M.V." Hour:
Overture—H.M. Coldstream Guards, "Poet and Peasant" (Suppe).
Symphony Orchestra—"Love, the Magician" (De Falla) (D1453).
6.12: Tacet.
6.15: March—United States Army Band, "Army and Marine" (Starke).
Waltz—International Novelty Quartet, "Cuckoo" (Jonasson) (Zono.).
Waltz—Jack Hylton's Orchestra, "Spanish Rose" (Pearson) (B5481).
Xylophone—Sam Herman, "Al Fresco" (Zonophone EE53).
6.27: Tacet.
6.30: New Light Symphony Orchestra, "In a Clock Store" (Orth) (C1308).
March—Royal Opera Orchestra, "Marche Hongroise" (Berlioz).
Symphony Orchestra, "Spanish Dance" (De Falla) (D1453).
6.42: Tacet.
6.45: Schottische—International Novelty Quartet, "Lena" (Newes) (Zono.).
Pipe organ, piano, trombone and harp—Shilkret's Rhythm Melodists, "When You're With Somebody Else" (Gilbert) (EA336).
Waltz—Jack Hylton's Orchestra, "The Angelus was Ringing" (Damarell) (B5481).
March—United States Army Band, "American Spirit" (Buglione).
6.57: Tacet.
7.0 : News session.
8.0 : Chimes. Programme of music to be rendered by the Dunedin Highland Pipe Band, under the direction of Pipe Major J. Kroon.
Selections—"Twenty-fifth King's Own," "Stirling Castle," "Robina's Waltz" (Traditional).
8.13: Soprano—Miss Aileen Young, "Villanelle" (Dell'Acqua).
8.17: Waltz—Rio Marimba Orchestra, "My Isle of Golden Dreams" (Blanfuss) (Columbia 02685).
8.21: Recitations—Miss Tui Northey, (a) "Catch You" (Crofts); (b) "As His Mother Used to Do."

8.26: March—Band of H.M. Grenadier Guards, "Regimental March Medley"
8.34: Bass-baritone solos—Mr. G. M. Salmond, (a) "Bois Epais" (Lully); (b) "The Border Ballad" (Cowan).
8.41: Pipe band selections—(a) "Scotland the Brave"; (b) "Miss McLeod"; (c) "Green Hills of Tyrol" (Traditional).
8.53: Contralto—Miss Mary Somerville, "Homing" (Del Reigo).
8.57: Waltz—Rio Marimba Orchestra, "Three O'Clock in the Morning" (Robledo) (Columbia 02685).
9.1 : Weather forecast and announcements.
9.3 : Soprano—Miss Aileen Young, (a) "Will o' the Wisp" (Prowse); (b) "The Star" (Rogers).
9.10: Pipe band selections—(a) "Heroes of Flodden"; (b) "Fairyland Waltz"; (c) "Barren Rocks of Aden" (Traditional).
9.20: Recital—Miss Tui Northey, selections from "Three Men in a Boat" (Jerome).
9.26: Humoresque—Australian Commonwealth Band, "Slidin' Thro' the Rye" (Hawkins) (Columbia 01235).
9.32: Contralto—Miss Mary Somerville, (a) "Sink, Red Sun," (Del Reigo); (b) "Tired Hands" (Sanderson).
9.39: Pipe band selection—"The Road to the Isles" (Traditional).
9.51: Bass-Baritone—Mr. G. M. Salmond, "Hear Me! Ye Winds and Waves" (Handel).
9.55: Negro spiritual—Fisk University Jubilee Singers, "Ezekiel Saw the Wheel" (Traditional) (Regal G20421).
9.58: Pipe band selection—"My Home"; (b) "Heroes of Victoria" (c) "Earl of Mansfield" (Traditional).
10.5 : God Save the King.

Wednesday, January 15

1YA, AUCKLAND (900 KILOCYCLES)—WEDNESDAY, JANUARY 15.

3.0 : Afternoon session—Selected items, including literary selection by the Announcer.
5.0 : Children's session, conducted by Uncle Tom.
6.0 : Dinner Session—"Columbia" Hour:
Waltz—Royal Philharmonic Orchestra, "Blue Danube" (Strauss).
H.M. Grenadier Guards Band, "Twist and Twirl" (Kottaun) (0987).
6.12: Tacet.
615: Ketelbey's Concert Orchestra, "In a Monastry Garden" (Ketelbey).
Waltz—Jacque Jacobs Ensemble, "Espana" (Waldteufel) (02560).
6.27: Tacet.
6.30: Columbia Symphony Orchestra, "Al Fresco" (Herbert) (01092).
Band of H.M. Grenadier Guards, "La Paloma" (Yradier) (0987).
La Nuova Orchestra, "Di Napoli" (Romani) (3066).
Waltz—Symphony Orchestra, "Artists Life" (Strauss) (02577).
6.43: Tacet.
6.45: Hawaiian—South Sea Islanders, "Hawaiian Hula Medley" (Cunha).
Banjo—Vess L. Ossman, "Moose March" (Flash) (Regal G6199).
Violin—George Lipschutz, "At Dawning" (Cadman) (Regal G20155).
National Military Band, "The Jolly Coppersmith" (Peter) (1076).
6.57: Tacet.
7.0 : News session and market reports.
7.40: Talk—Mr. Norman Kerr, "Physical Culture."
8.0 : Chimes.
Overture—1YA Orchestral Octet, under the conductorship of Mr. Eric Waters, "Rosenkavalier" selection (Strauss).
8.11: Contralto—Mrs. B. Jellard, (a) "My Ships" (Barrett), (b) "My Heart Has a Quiet Sadness" (Sargent).
8.18: Folk Dance Band, "Mr. Beveridge's Maggot" (Folk Dance).
8.22: Recital—Mr. A. McSkimming, "A Gentleman of France" (Walsh).
8.26: Instrumental—1YA Orchestral Octet, "Where the Citrons Bloom" (Strauss).
8.35: Tenor—Mr. Roger Errington, (a) "Mother I Love" (Drummond), (b) "A Dream" (Bartlett).
8.42: Pianoforte—Miss Cherry Anderson, "Medley of Popular Tunes" (Own arrangement).
8.46: Male voices—Salon Group, "Stephen Foster Melodies" (H.M.V. C1657).
8.54: Instrumental—1YA Orchestral Octet, "Danse Macabre" (Saint-Saens).
9.3 : Weather report.
9.5: Black Diamonds Band, "The Last Goodbye" (Moretti).
9.8 : Tenor—Mr. R. Errington, "To a Miniature" (Brahme).
9.12: Instrumental—1YA Orchestral Octet, "Three Light Pieces" (Somervell): 1. Bagatelle, 2. Melody; 3. Valse.
9.21: Recitals—Mr. A. McSkimming, (a) "The Pipes o' Troon" (Williams); (b) "The Man With a Single Hair" (Gathony).
9.28: Choral—Lay Vicars of Westminster Abbey, "The Little Sandman" (West) (H.M.V. B2781).
9.31: Pianoforte—Miss Cherry Anderson, (a) "Falling in Love With You" (Davis-Meyer), (b) "Nocturne" (Chopin).
9.38: Contralto—Mrs. B. Jellard, "One Morning Very Early" (Sanderson).
9.42: Instrumental—1YA Orchestral Octet, Latest Novelties
9.51: Soprano—Dusolina Giannini, "Manella Mia" (Neapolitan folk song).
9.55: Band of H.M. Coldstream Guards, (argd. Winter) (H.M.V. C1217).
10.3 : Close down.

2YA, WELLINGTON (720 KILOCYCLES)—WEDNESDAY, JANUARY 15.

SILENT DAY.

3YA, CHRISTCHURCH (980 KILOCYCLES)—WEDNESDAY, JANUARY 15

3.0 : Afternoon concert session.
4.30: Close down.
5.0 : Children's hour, conducted by Uncle John.
6.0 : Dinner session—"Parlophone" hour:
Overture—Berlin State Opera Orchestra, "Mignon" (Thomas) E10557.
Grand Symphony Orchestra, "Tales of Hoffman—Barcarolle" (Offenbach) A4061.
6.12: Tacet.
6.15: Fantasia—Edith Lorand Orchestra, "Faust" (Gounod) E10579.
Piano—Karol Szreter, "Fledermaus" (Strauss) A4082.
6.27: Tacet.
6.30: Selection—Dajos Bela Orchestra, "Lo Tosca" (Verdi) A4045.
'Cello—Orabio de Castro, "Nocturne in E Flat" (Chopin) E10581.
6.42: Tacet.
6.45: Overture—Grand Symphony Orchestra, "Fra Diavolo" (Auber) A4022.
Grand Symphony Orchestra, "Tales of Hoffman—Entr'acte and Minuet" (Offenbach) A4061.
6.57: Tacet.
7.0 : News and information session.
7.30: Addington stock market reports.
8.0 : Chimes.
Studio Instrumental Octet, under the conductorship of Mr. Harold Beck, (a) "At the Theatre" (Foulds); (b) "Evening in the Forest" (Fowlds); (c) "Fiddler's Fancy" (Foulds).
8.13: Vocal quartet—Salon Quartet, "Oft in the Stilly Night" (arrgd. Sir R. Stewart).
Contralto solo—Miss Dulcie Mitchell, "Per La Gloria" (Bonocini).
8.20: Saxophone duet with guitar and piano, "Rudy Wiedoeft and Arnold Brilhart, "La Golondrina" (Zono. EE129).
8.23: Tenor—Mr. H. Blakeley, "Then You'll Remember Me" from "Bohemian Girl" (Balfe).
8.31: Studio Instrumental Octet, (a) "Dance Triste" (Hahn); (b) "Scene de L'Essayagne" (Menestral).
8.37: Tenor and baritone duet—Salvator Duo, "Watchman, What of the Night" (Sargeant).
8.42: Suite—Band of H.M. Coldstream Guards, "Suite Francaise" (Foulds).
8.39: Soprano—Miss Mary O'Connor, "Adieu Forets" (Tschaikowsky).
8.54: Baritone—Mr. J. Graham Young, "Here's to Love and Laughter" (Rubens).
8.58: Weather forecast and announcements.
9.0 : Soprano and contralto duet—Salonelle Duo, "Awake" (Pelissier).
9.4 : Studio Instrumental Octet, (a) "Commencement of Rienzi Overture" (Wagner); (b) "Entr'acte" (Dubois).
9.14: Contralto—Miss Dulcie Mitchell, "My Ships" (Barratt).
9.18: Tenor—Mr. H. Blakeley, "Eleanore" (Coleridge-Taylor).
9.22: Suite—Miss Irene Morris and Miss Florence Miller, "Suite for Two Violins" (Moszkowski).
9.30: Soprano—Miss Mary O'Connor, (a) "The Little Green Balcony" (Coates); (b) "The Charm of Spring" (Clarke).
9.36: Baritone—Mr. J. Graham Young, "Floral Dance" (Moss).
9.40: Studio Instrumental Octet, (a) "Gipsy Airs" (Sarasate) (violin solo); (b) "Traumerei" (Schumann); (c) "Il Bacio" (Arditi).
9.50: Vocal quartet—Salon Quartet, "The Day's Farewell" (Nessler).
9.53: Organ solos—Reg. Foort, (a) "The Desert Song" (Romberg); (b) "The Riff Song" (Romberg) (H.M.V. B2463).
10.0 : God Save the King.

4YA, DUNEDIN (650 KILOCYCLES).—WEDNESDAY, JANUARY 15.

3.0 : Chimes—Selected gramophone items.
3.15: Talk to farm women on Home Science—"Common Problems of Bottling."
4.30: Close down.
5.0 : Children's hour, conducted by Big Brother Bill.
6.0 : Dinner session—"Columbia" hour:
Instrumental—Ketelbey's Concert Orchestra, "In a Persian Market"
Violin—Efrem Zimbalist, "Liebesleid—Old Vienna Waltz" (Kreisler).
6.12: Tacet.
6.15: Plaza Theatre Orchestra, "The Busy Bee" (Bendix) (01438).
Plaza Theatre Orchestra, "My Lady Dainty" (Hesse).
J. H. Squire's Celeste Octet, "La Serenata" (Braga) (9116).
Cinema Organ—G. T. Pattman, "Firefly" (Nicholls) (01348).
6.27: Tacet.
6.30: Columbia Symphony Orchestra, "March of the Toys" (Herbert) (02651).
Waltz—New Concert Orchestra, "Hydropaten" (Gungl) (02672).
Violin—Efrem Zimbalist, "Zapateado" (Sarasate) (04221).
6.42: Tacet.
6.45: New Concert Orchestra, "Jolly Fellows" (Bruder) (02672).
J. H. Squire's Celeste Octet, "Serenade" (Titl) (,9116).
Eddie Thomas' Collegians, "Beautiful Ohio" (Earl) (02651).
6.56: Tacet.
7.0 : News and information session.
7.15: Talk to farmers—Mr. W. K. Dallas, Orchard Instructor, Department of Agriculture, "Frost Control in Orchards" (Arranged by 4YA Primary Productions Committee).
8.0 : Chimes.
Instrumental—The Novelty Trio, "Side by Side" (Woods); "Forty-seven Ginger Headed Sailors" (Sarony).
8.9 : Soprano—Miss Stasia McCready, "Ave Maria" (Luzzi).

8.13: Instrumental—The Novelty Trio, (a) "Sing a Little Love Song" (Gottler); (b) "Hitting the Ceiling" (Gottler); (c) "Good Morning, Good Evening, Good Night" (Lavin).
8.23: Recitation—Miss N. Warren, "Sherwood" (Noyes).
8.27: Scottish Comedian—Buster Brown, (a) "She's ma Daisy"; (b) "The Laddies who Fought and Won" (Lauder).
8.34: Contralto—Miss Netta Wilkie, (a) "Slumber Song" (Head); (b) "Vornei" (Foste).
8.42: Instrumental—The Novelty Trio, (a) "You're the Cream in my Coffee" (De Sylva); (b) "My Song of the Nile" (Meyer); (c) "Don't Hold Everything" (De Sylva).
8.53: Baritone—Rev. L. North, (a) "Secret of the Tide" (M'Geoch); (b) "Two Little Ships" (M'Geoch).
9.0 : Weather forecast and announcements.
9.2 : Soprano solos—Miss Stasia McCready, (a) "Over the Meadow" (Carew); (b) "Remember" (Donizetti).
9.8 : Recitation—Miss N. Warren, "The Faithful Soul."
9.12: Instrumental—The Novelty Trio, (a) "Steppin' Along" (Kernell); (b) "To Know You is to Love You" (De Sylva).
9.16: Contralto—Miss Netta Wilkie, "The Ships of Arcady" (Head).
9.20: Scottish Comedian—Buster Brown, "Piper McFarlane" (Lauder).
9.24: Bass solo—Rev. L. North, "Pale Moon" (Logan).
9.27: Instrumental—The Novelty Trio, "My Heart is Bluer than Your Eyes" (Wilhite).
9.31: "Brunswick" dance programme:
Foxtrot—Hal Kemp's Orchestra, "You Wouldn't Fool Me, Would You?"
Foxtrot—Harold Stern's Orchestra, "From Sunrise to Sunset" (Miller).
Foxtrot with vocal chorus—Hal Kemp's Orchestra, "My Lucky Star".
Foxtrot—Arnold Johnson's Orchestra, "Tear Drops" (Davis) (4251).
9.42: Comedienne with orchestra—Zelma O'Neal, "Button Up Your Overcoat".
Foxtrot with vocal chorus—Eight Radio Stars, "My Annapolis".
Foxtrot—Colonial Club Orchestra, "Hittin' the Ceiling" (Gottler).
Waltz—Eight Radio Stars, "I Found Happiness" (Rapee) (4272).
Waltz—Ray Miller's Orchestra, "My Angelina" (Wayne) (4322).
9.57: Old-time orchestra—Al Hopkins' Buckle Busters, "Polka Medley."
Foxtrot—Red Nicholls and His Five Pennies, "On the Alamo" (Kahn).
Foxtrot—Ray Miller's Orchestra, "Cradle of Love" (Wayne) (4233).
Foxtrot—Hotel Ten Eyck's Whispering Orchestra, "Then we Canoe-dle-oodle" (Woods) (4372).
Foxtrot—Al Goodman's Orchestra, "I'm Still Caring" (Vallee) (4362).
10.12: Vocal solo with novelty accompaniment—Frank Luther, "Peg-Leg Jack".
Foxtrot with vocal chorus—Hotel Ten Eyck Whispering Orchestra, "Jericho" (Robin) (4372).
Foxtrot—Al Goodman's Orchestra, "I'm Just a Vagabond Lover".
Waltz—Regent Club Orchestra, "Sleepy Valley" (Sterling) (4370).
10.24: Old-time orchestra—Al Hopkins' Buckle Busters, "Marosovia Waltz"
Organ solo with vibrophone—Lew White, "Mean to Me" (Turk) (4361).
Foxtrot—Colonial Club Orchestra, "Sing a Little Love Song" (Gottler).
Foxtrot—Roy Ingraham's Orchestra, "That's Living" (Ryan) (4366).
Foxtrot with vocal chorus—Colonial Club Orchestra, "There's a Four-leaf Clover in My Pocket" (Colwell) (4247).
10.39: Vocal solo with novelty accompaniment—Frank Luther, "Barnacle Bill, the Sailor" (Robison) (4371).
Foxtrot—Six Jumping Jacks, "Oh! Baby, what a Night" (Brown).
Waltz—Regent Club Orchestra, "My Dear" (Kahn) (4370).
Waltz—Castlewood Marimba Band, "Wonderful You" (Medkill) (4379).
10.51: Organ solo—Lew White, "Deep Night" (Henderson) (4361).
Foxtrot—Colonial Club Orchestra, "Oh! What a Night to Love".
Waltz—Regent Club Orchestra, "Evangalina" (Rose) (4379).
11.0 : Close down.

Thursday, January 16

1YA, AUCKLAND (900 KILOCYCLES)—THURSDAY, JANUARY 16.

3.0 : Afternoon session, including literary selection by the announcer.
4.30: Close down.
5.0 : Children's session, conducted by Peter Pan.
6.0 : Dinner session—"His Master's Voice" Hour:
Hawaiian—Hilo Hawaiian Orchestra, "Sweet Hawaiian Dreams" (Coleman) (B2328).
Instrumental Trio—"Le Cygne" (Saint Saens) (B2943).
Organ—Edward O'Henry, "Faust Waltz" (Gounod) (B2873).
Orchestra—Mayfair Orchestra, "Waiata Maori" (Hill) (EA266).
6.13: Tacet.
6.15: Orchestra—Marek Weber and His Orchestra, "The Beggar Student" Selection (Milloker) (C1528).
Orchestra—New Mayfair Orchestra, "Love Lies" (C1658).
6.27: Tacet.
6.30: Organ—Charles W. Saxby, "For My Baby" (Kahal, Wheeler and Snyder) (Zonophone 5143).
Violin—Charles Williams, "Somewhere a Voice is Calling" (Tate).
Hawaiian—Hilo Hawaiian Orchestra, "Hawaiian Sunset" (B2328).
Orchestra—The Troubadours, "Love Dreams" (Harris-Klages).
6.43: Tacet.
6.45: Orchestra—Walter Kolomoku's Honoluluans, "Southern Melodies Waltz"
Orchestra—International Novelty Orchestra, "Emperor" (Strauss).
6.57: Tacet.
7.0 : News and market reports,
7.40: Talk—Mr. Bernard Martin, "Introductory Remarks" of a series of talks to be given under the auspices of The League of Nations' Union.
8.0 : Chimes. Presentation of a novelty programme by "The Minus Fives" entitled "In a New Budget of Comedy and Melody," assisted by the "Clarsax Duo," who will render instrumental numbers.
9.30: Dance music—"Columbia":
Foxtrot—Palais Royal Orchestra, "Louise" (Whiting) (Regal G20527).
Foxtrot—Ambassadors Band, "My Man" (Channing) (01566).
Foxtrot—Willie Creager's Orchestra, "On Top of the World Alone" (Whiting) (Regal G20527).
Foxtrot—Ambassadors' Band, "Second-Hand Rose" (Clarke) (01566).
9.42: Hawaiian—Milford's Hawaiian Players, "Hawaiian Hotel" (Nainas).
Foxtrot—The Harmonians, "When My Dreams Come True" (Berlin).
Foxtrot—Paul Whiteman's Orchestra, "China Boy" (Winfree) (07025).
Foxtrot—Stellar Dance Band, "This is Heaven" (Yellen) (Regal).
Waltz—Gil Dech's Syncopators, "Old Timer" (Rose) (01686).
9.57: Soprano solo—Marie Burke, "I'd Rather Be Blue Over You" (Rose).
Foxtrot—Paul Whiteman's Orchestra, "I'm in Seventh Heaven" (De Sylva) (07023).
Foxtrot—Paul Whiteman's Orchestra, "Oh, Miss Hannah" (Deppen).
Foxtrot—Paul Whiteman's Orchestra, "Little Pal" (de Sylva) (07023).
Foxtrot—Rhythmic Troubadours, "You're the Cream in My Coffee" (de Sylva) (Regal G20555).
10.12: Hawaiian—Milford's Hawaiian Players, "Honeymoon Chimes" (Brown) (Regal G20550).
Foxtrot—Royal Canadians, "This is Heaven" (Yellen) (01632).
Foxtrot—Royal Canadians, "I Get the Blues when it Rains" (Weaver).
Waltz—Milford's Hawaiian Players, "Hawaihau" (Regal G20550).
10.24: Soprano—Marie Burke, "You Kiss My Hand, Monsieur" (Erwin).
Foxtrot—Rhythmic Troubadours, "Jericho" (Robin) (Regal G20532).
Foxtrot—Gil Dech's Syncopators, "The Toymakers' Dream" (Golden).
Foxtrot—Ray Starita's Ambassadors, "Ever so Goosey" (Wright).
Foxtrot—Rhythmic Troubadours, "Do Something" (Green) (Regal).
Foxtrot—Ipana Troubadours, "To Be In Love" (Turk) (01660).
10.42: Hawaiian—Milford's Hawaiian Players, "Aloha Land" (Herzer).
Foxtrot—All Star Trio, "Dream Mother" (Burke) (01630).
Foxtrot—Rhythmic Troubadours, "To Know is to Love You" (de Sylva).
Foxtrot—Corona Dance Band, "Olaf" (Baer) (Regal G20519).
Waltz—All Star Trio, "Evangeline" (Jolson) (01630).
11.0 : God Save the King.

2YA, WELLINGTON (720 KILOCYCLES)—THURSDAY, JANUARY 16.

3.0 : Chimes. Selected gramophone items.
3.30: Lecturette—Miss Flora Cormack, "Filmland's Fashion Forecast in Daytime Dress Modes."
3.40: Selected gramophone items.
4.55: Close down.
5.0 : Children's session, conducted by Uncle George.
6.0 : Dinner music session—"Columbia" Hour:
H.M. Grenadier Guards Band, "New Sullivan Selection" (arrgd. Godfrey) (02731).
Waltz—Court Symphony Orchestra, "Destiny Waltz" (Baynes) (564).
6.12: Tacet.
6.15: Columbia Symphony Orchestra, "Idilio" (Lack) (01076).
Suite—New Queen's Hall Light Orchestra, "Petite Suite de Concert" (Coleridge-Taylor).
1. La Caprice de Nanette; 2. Demande et Reponse (02588).
6.26: Tacet.
6.30: Suite—New Queen's Hall Light Orchestra, "Petite Suite de Concert" (Coleridge-Taylor). 1. Un Sonnet's d'Amour; 2. La Tarantelle Fretillante (02589).
Wurlitzer organ solo—Terance Casey, "I'm Lonely" (Coates) (01501).
6.42: Tacet.
6.45: Dance Suite—H.M. Grenadier Guards Band, "Nell Gwynn Dances" (German): 1. Country Dance; 2. Pastoral Dance (01329).
Columbia Symphony Orchestra, "Spring Song" (Mendelssohn).
Waltz—Symphony Orchestra, "Morgan Blatter" (Strauss) (9218).
6.58: Tacet.
7.0 : News session, market reports and sports results.
7.40: Lecturette—Hare Hongi, "Maori Pronunciation."
8.0 : Chimes. Studio concert by Wellington Municipal Tramways Band (Conductor Mr. E. Franklin) and 2YA artists.
8.1 : March—Wellington Tramways Band, "Stars and Stripes March" (Sousa).
Overture—Band, "Zauberflote" (Mozart).
8.15: Soprano—Mrs. Gwendoline Barlow, "Your Voice" (Scott-Hughes).
8.19: Baritone—Mr. Cyril McCheyne, "Down Vauxhall Way" (Oliver).
8.23: Concert solo with band accompaniment—Bandsman Stevenson, "Australis" (Lithgow).
8.29: Elocution—Mr. Ken Aitken, "The Coward" (Hemsley).
8.36: Instrumental—Victoria Trio, "The Prince Waltz" (Zonophone A343).
8.40: Contralto—Miss Ivy Stanton, (a) "Morepork"; (b) "Moki" from "Three N.Z. Bird Songs" (Prentice).
8.46: Tenor—Mr. Harry Phipps, (a) "Colinette" (Phillips); (b) "Come My Beloved" (Newton).
8.52: Waltz—The Band, "Casino Tanze" (Gung'l).
8.58: Weather report and announcements.
9.0 : Soprano—Mrs. Gwendoline Barlow, (a) "Break o' Day" (Sanderson); (b) "Hiawatha's Melody of Love" (Meyer).
9.6 : Instrumental—Victoria Trio, "La Sorella—Polka" (Gallini).

9.10: Baritone—Mr. Cyril McCheyne, (a) "I Know a Lovely Garden" (D'Hardelot); (b) "In an old Fashioned Garden" (Squire).
9.16: March—The Band, "Brilliante" (Ord Hume).
9.20: Elocution—Mr. Ken Aitken, "The Waster" (Gaston-Murray).
9.27: Trombone solo, with band accompaniment—Bandsman Glennie, "The Switchback" (Sutton).
9.32: Tenor—Mr. Harry Phipps, "Laugh and Sing" (Drummond).
9.36: Orchestra with Wurlitzer organ—Jack Hylton's Orchestra, "Old Time Songs" (H.M.V. C1681).
9.44: Contralto—Miss Ivy Stanton, "O Love from Thy Power" (Saint-Saens)
9.48: Male Voices with piano—"Wake Up" (Trent-Robison). (H.M.V. EA609)
9.51: Humoreske, The Band, "McGregor's Wedding" (Campbell). March—The Band, "Waldermere" (Losey).
10.1 : God Save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—THURSDAY, JANUARY 16.

3.0 : Afternoon concert session.
4.30: Close down.
5.0 : Children's hour.
6.0 : Dinner session—"H.M.V." Hour:
Royal Opera Orchestra, "Præludium" (Jarnefeldt) (B2618).
'Cello—Pablo Casals, "Melody in F" (Rubinstein) (D4833).
Waltz—Royal Opera Orchestra, "Eugin Onegin" (Tschaikowsky).
Balalaika Orchestra, "Shining Moon" (Russian folk song) (EA48).
6.12: Tacet.
6.15: Suite—Paul Whiteman's Orchestra, "Suite of Serenades" (Herbert): (1) Spanish, (2) Chinese, (3) Cuban, (4) Oriental (EB26).
Waltz—Philadelphia Symphony Orchestra, "Tales from the Vienna Woods" (Strauss) (ED2).
6.27: Tacet.
6.30: Royal Opera Orchestra, "Berceuse" (Jarnefeldt) (B2618).
'Cello—Pablo Casals, "Traumerei" (Schumann) (DA833).
Male quartet—The Rounders, "Chlo-e" (Kahn) (EA402).
San Francisco Symphony Orchestra, (a) "Serenade" (Volkman), (b) "Flight of the Bumble Bee" (Rimsky-Korsakov) (ED9).
6.42: Tacet.
6.45: Chicago Symphony Orchestra, (a) "Valse Triste" (Sibelius) (ED5), (b) "Funeral March of a Marionette" (Gounod).
March—San Francisco Symphony Orchestra, "Marche Militaire" (Schubert) (ED9).
6.57: Tacet.
7.0 : News and information session.
7.30: Lecturette—Mr. W. Montgomery, of the State Forest Service (arranged by 3YA Primary Productions Committee).
8.0 : Chimes. Special programme by the Canterbury Repertory Theatre Society.
Overture—Orchestra, "Caliph of Bagdad" (Boieldieu).
8.9: Shakesperean sketch—Professor Shelley (Cassius), "Quarrel Scene" from "Julius Cæsar" (Shakespeare).
8.17: Contralto—Mrs. A. Harper, "Habanera" from "Carmen" (Bizet).
8.21: Selection—Orchestra, "Maritana" (Wallace).
8.29: Short play—Canterbury Repertory Theatre Society, "Reggie Makes a Complaint" (Peach).
8.39: Viola—Lionel Tertis, "Allegro from Sonata in F" (Handel) (Col.).
8.43: Recitative and aria—Mr. A. G. Thompson, "Fair Star of Eve" (Wagner)
8.48: Selection—Orchestra, "Norma" (Bellini).
8.56: Weather forecast and announcements.
8.58: Dramatic and musical presentation of Ibsen's "Peer Gynt," introducing "Anitra's Dance" and "In the Hall of the Mountain King." "Solveig's Song" will be sung by Mrs. W. B. Harris.
9.28: Selection—Orchestra, "William Tell" (Rossini).
9.36: Play—Canterbury Repertory Theatre Society, "Augustus in Search of a Father" (Chapin).
9.56: Soprano—Mrs. W. B. Harris, "Shakesperean Songs" (Quilter).
10.2 : God Save the King.

4YA, DUNEDIN (650 KILOCYCLES)—THURSDAY, JANUARY 16.

SILENT DAY.

Friday, January 17

1YA, AUCKLAND (900 KILOCYCLES)—FRIDAY, JANUARY 17.

3.0 : Afternoon session—Selected studio items, including literary selection by the Announcer.
5.0 : Children's session, conducted by Nod and Aunt Jean.
6.0 : Dinner session—"His Master's Voice" Hour:
Victor Symphony Orchestra, "Dance of the Hours" (Ponchielli).
International Concert Orchestra, "Gold and Silver" (Lehar).
6.13: Tacet.
6.15: Pianoforte—Mischa Levitski, "Organ Prelude and Fugue in A Minor" (Bach-Liszt) (D1619).
Flonzaley Instrumental Quartet, "Quartet in D Minor—Scherzo" (Schumann) (DB249).
6.27: Tacet.
6.30: New Symphony Orchestra, (a) "Henry VIII Dances" (German); (b) "Nell Gwynn Dances" (German) (B2987).
6.43: Tacet.
6.45: Violin—Fritz Kreisler, "Caprice Viennois" (Kreisler) (DB1091).
New Light Symphony Orchestra, (a) "Prelude in C Sharp Minor"; (b) "Prelude in G Minor" (Rachmaninoff) (Zonophone EF24).
6.57: Tacet.
7.0 : News and information and market reports.
8.0 : Chimes.
Relay of concert from Lewis Eady Hall.
8.31: Instrumental—Edith Lorand Orchestra, "Minuet" (Boccherini).
8.35: Baritone—Mr. Ernest Snell, "I am Fate" (Hamblen).
8.39: Instrumental—Studio Trio, "Ballet Sylvia" (Delibes).
8.46: Contralto—Miss Phyllis Hazell, (a) "Over the Dreamland Sea" (Phillips); (b) "Beloved" ("Over the Rim of the Moon") (Head).
8.53: Choral—Berlin Union of Teachers, "The Loreley" (Silcher).
8.57: Pianoforte—Mr. Eric Waters, "Gardens in the Rain" (Debussy).
9.2 : Weather report.
9.4 : Orchestral—Edith Lorand Orchestra, "I Love You" (Grieg).
9.8 : Baritone—Mr. E. Snell, (a) "To Anthea" (Hatton); (b) "The Bitterness of Love" (Dunn).
9.15: Flute solo—Mr. George Poore, "La Babbilard" (Tershak).
9.21: Soprano—Margherita Salvi, "The Carnival of Venice" (Benedict).
9.25: 'Cello—Miss Molly Wright, "Tarantelle" (Popper).
9.31: Berlin State Opera House Orchestra, "Iris Dances" (Mascagni).
9.35: Contralto—Miss Phyllis Hazel, "In Questa Tomba" (Beethoven).
9.38: Flute solo—Mr. George Poore, "Carnival de Venice" (Briccialdi).
9.45: Instrumental—Studio Trio, "Slow Movement and Scherzo" (Godard).
9.52: Choral—Sieber Choir, "Blue Danube Waltz" (Strauss) (Parlo. 5019).
10.0 : God Save the King.

2YA, WELLINGTON (720 KILOCYCLES).—FRIDAY, JANUARY 17.

3.0 : Chimes—Selected gramophone items.
4.55: Close down.
5.0 : Children's session, conducted by Big Brother Jack.
6.0 : Dinner Music Session—"Columbia" hour.
Intermezzo—Milan Symphony Orchestra, "Cavalleria Rusticana".
Herman Finck's Orchestra, "Schubertiana" (Arr. Finck) (02721).
6.12: Tacet.
6.15: Herman Finck's Orchestra, "Schubertiana" (Arr. Finck) (02722).
Marimba Orchestra—Rio Marimba Orchestra, "Three O'Clock in the Morning" (Robledo) (02685).
6.27: Tacet.
6.30: Bayreuth Festival Orchestra, "Siegfried—Prelude Act 3" (Wagner).
Waltz—Eddie Thomas' Collegians, "Moment with You" (Shilkret).
Waltz—Eddie Thomas' Collegians, "Moonlight on the Danube" (Gay).
Wurlitzer organ—Stanley MacDonald, "La Rosita" (Dupont) (Regal).
6.43: Tacet.
6.45: Regal Orchestra, "Pagliacci" (Leoncavallo) (Regal G30007).
Marimba Orchestra—Rio Marimba Orchestra, "My Isle of Golden Dreams" (Blaufuss) (02685).
6.57: Tacet.
7.0 : News session, market reports and sports results.
8.0 : Chimes.
Overture—2YA Orchestrina, under the conductorship of Signor Truda, "Knight Errant" (Bendix).
8.9 : Soprano—Miss Ena Rapley, "Love Will Find a Way," from "Maid of the Mountains" (Fraser-Simpson).
8.13: Baritone—Mr. Arthur Brady, "Loving Smile of Sister Kind," from "Faust" (Gounod).
8.17: Violin—Albert Sammons, "Meditation—Thais" (Massenet) (Col. 02687).
8.21: Tenor—Mr. Edwin Dennis, "Che Gelida Manina" from "La Boheme".
8.25: Operatic selection—2YA Orchestrina, "Samson and Delilah".
8.33: Entertainers—Mr. and Mrs. Albert Russell, (a) "That's Why I Love Her" (David); (b) "Darling" (Lohr); (c) "The Uz-guz-goozelum".
8.43: Contralto—Miss Ruby Jackson, "Ave Maria" (Leoncavallo).
8.47: 'Cello—Gaspar Casado, "Melodie Arabe" (Glazounow).
8.50: Vocal duet—Messrs. Edwin Dennis and Arthur Brady, "Larboard Watch" (Benedict).
8.54: Operatic selection—2YA Orchestrina, "The Huguenots" (Meyerbeer).
9.2 : Weather report and announcements:
9.4 : Soprano—Miss Ena Rapley, "Under the Deodar," from "The Country Girl" (Monckton).
9.8 : Baritone—Mr. Arthur Brady, "The Yeomen of England" (German).
9.12: Musical Comedy Selection—2YA Orchestrina, "Little Dutch Girl".
9.20: Entertainers—Mr. and Mrs. Albert Russell, (a) "Macnamara's Band" (Watson); (b) "Blue Hills of my New Zealand" (Wallace).
9.27: Contralto—Miss Ruby Jackson, "Big Lady Moon" (Coleridge-Taylor).
9.31: Band of H.M. Grenadier Guards, "New Sullivan Selection".
9.39: Vocal duet—Miss Ena Rapley and Mr. Edwin Dennis, "Parted" (Tosti).
9.43: Sextette with chorus and orchestra—Marie Gentile, Dino Borgioli, G. Vanelli, G. Baccaloni, G. Nessi, I. Mannerini and La Scala Chorus, "Sextette from Lucia di Lammermoor" (Donizetti) (Col. 04025).
9.47: Tenor—Mr. Edwin Dennis, "Eleanore" (Coleridge-Taylor).
9.51: Operatic selection—2YA Orchestrina, "Dance of the Hours".
10.0 : God Save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—FRIDAY, JANUARY 17.

3.0 : Afternoon session.
4.30: Close down.

5.0 : Children's hour, conducted by "Storyman."
6.0 : Dinner session—"H.M.V." Hour:
Selection—Kauffman's Orchestra, "The Gipsy Baron" (Strauss) (H.M.V. C1393).
Waltz—La Vittoria Orchestra, "Wedding of the Winds" (Hall) (Zono.)
6.12: Tacet.
6.15: Piccadilly Orchestra, "If Only I Had You" (Davies) (H.M.V. B2713).
Piccadilly Orchestra, "Lolita" (Ferrete).
Hawaiian—Kolomoku's Honoluluans, "Aloha Oe" (Liliuokalana).
Piccadilly Orchestra, "Charmaine" (Rapee) (H.M.V. B2526).
6.27: Tacet.
6.30: Selection—New Mayfair Orchestra, "This Year of Grace" (Coward).
Warin's Orchestra, "Ah! Sweet Mystery of Life" (Herbert) (EB37).
Hawaiian—Kolomoku's Honoluluans, "Three O'Clock on the Morning" (Robledo) (Zonophone EF23).
6.42: Tacet.
6.45: Orchestral—Victor Concert Orchestra, "Minuet in G" (Paderewski).
Orchestral—Victor Concert Orchestra, "Amaryllis" (Thys).
Orchestral—Piccadilly Orchestra, "Bird Songs at Eventide" (Coates).
Waltz—International Concert Orchestra, "Blue Danube" (Strauss).
6.57: Tacet.
7.0 : News and information session.
8.0 : Chimes.
Overture—Percival Mackey's Band, "The Vagabond King" (Friml).
8.9 : Baritone—Mr. A. Gladstone Brown, (a) "Hell's Pavement" (Keel), (b) "The Wanderer's Song" (Keel).
8.15: Dance music—Bailey-Marston Dance Orchestra, (a) "When Summer is Gone" (Wilhite), (b) "Cuckoo" (Robison).
8.23: Dramatic sketch—Mr. and Mrs. W. J. Bailey, "The Burglar and the Girl" (Boulton).
8.35: Cornet and trombone—Brown and Remfrey, "The Gladiators" (La Thiere) (Regal G20231).
8.38: Mezzo-soprano—Mrs. Maud Wood, "I Love the Moon" (Rubens).
8.42: Organ solo—Terence Casey, "Bird Songs at Eventide" (Coates) (Col.).
8.46: Recitation—Mr. W. H. Moses, "The Amateur Rider" (Paterson).
8.51: Dance music—Bailey-Marston Dance Orchestra, (a) "The Sun is at My Window" (Young), (b) "Chopinata" (Doucet).
8.59: Male quartet—Shannon Male Quartet, "On the Banks of the Wabash, Far Away" (Dresser) (Regal G20298).
9.2: Weather forecast and announcements.
9.4 : Irish hornpipe—Flanagan Bros., "McGonagle Taste" (trdtl.) (Regal)
9.8 : Baritone—Mr. A. Gladstone Brown, "Lackaday" (Crampton).
9.12: Dance music—Bailey-Marston Dance Orchestra, (a) "Pagan Love Song" (Brown), (b) "Dream Mother" (Burke).
9.20: Sketches—Mr. and Mrs. J. W. Bailey, (a) "All the World's a Links" (Simpson), (b) "Lucky Jim" (Simpson).
9.32: Mezzo-soprano—Mrs. Maud Wood. (a) "Alone in Love's Garden" (Hewitt), (b) "Just a-Wearyin' for You" (Jacobs-Bond).
9.38: Novelty—Flanagan Bros.' Novelty Orchestra, "Chicken Reel," "Turkey in the Straw," "Arkansas Traveller" (trdtl.) (Regal G20563).
9.41: Recitation—Mr. W. H. Moses, "Fowls."
9.47: Dance music—Bailey-Marston Dance Orchestra, (a) "Weary River," (b) "Boomerang" (Shapiro).
9.55: Male quartet—Shannon Male Quartet, "The Sidewalks of New York" (Lawlor and Blake) (Regal G20298).
9.59: Dance music will be continued by the Bailey-Marston Dance Orchestra until 11 p.m.
11.0 : God Save the King.

4YA, DUNEDIN (650 KILOCYCLES)—FRIDAY, JANUARY 17.

3.0 : Chimes. Selected gramophone items.
4.30: Close down.
5.0 : Children's hour, conducted by Aunt Sheila.
Dinner session—Berlin State Opera Orchestra, "The Magic Flute" (Mozart) (E464).
Royal Opera Orchestra, "Hungarian Dance No. 5 in F Sharp Minor" (Brahms) C1415).
Grand organ—Arthur Meale, "Simple Aveu" (Thome) (Zono. 5162).
6.13: Tacet.
6.15: New Light Symphony Orchestra, "Peer Gynt Suite" (No. 2 (Grieg): (1) Ingrid's Lament, (2) Arabian Dance (C1571).
Violin—Erica Morini, "Romanza Andaluza" (Sarasate) (D1445).
6.27: Tacet.
6.30: New Light Symphony Orchestra, "Peer Gynt Suite" No. 2 (Grieg): (1) Return of Peer Gynt, (2) Solveig's Song (C1572).
Violin—Erica Morini, "Introduction and Tarantelle" (Sarasate).
6.42: Tacet.
6.45: Marek Weber's Orchestra, "Vienna by Night" (Komzak) (C1507).
'Cello—Lauri Kennedy, "Hungarian Rhapsody" (Popper) (C1595).
6.57: Tacet.
7.0 : News and information session.
8.0 : Chimes.
Overture—Royal Opera Orchestra, "1812 Overture" (Tschaikowsky).
8.13: Contralto—Miss Ida Lungley, (a) "Steal Away," (b) "I Want to be Ready" (traditional).
8.20: Violin and guitar—Guilietta Morini, "Harlequin's Serenade" (Drigo).
8.23: Recitation—Miss Nellie Osborn, "He Fell Among Thieves" (Newbolt).
8.29: Instrumental trio—4YA Broadcasting Trio, Schumann Trio, Opus 63, First and Second Movements (Schumann).
8.44: Baritone—Mr. A. W. Alloo, "If Thou Went Blind" (Johnson).
8.48: Piano solo—Mrs. E. Drake, "The Prince" (Bridge).
8.53: Soprano—Miss Rae Stubbs, (a) "The Flutes of Arcady" (James), (b) "The Asra" (Rubinstein).
9.0 : Weather forecast and announcements.
9.2 : Suite—Royal Opera Orchestra, (a) "Anitra's Dance," (b) "In the Hall of the Mountain King," from "Peer Gynt Suite" (Grieg).
9.10: Contralto—Miss Ida Lungley, "Deep River" (trdtl.).
9.14: Violin and guitar—Guilietta Morini, "Vorrei" (Poggis) (Zono. EE134).
9.17: Recitations—Miss Nellie Osborn, (a) "Nini, Ninette, Ninon" (Weatherly), (b) "Needles and Pins" (Weatherly).
9.22: Instrumental Trio—4YA Broadcasting Trio, (a) "Menuet" (Af. Militair—Sumfoni) (Haydn), (b) "Ave Maris Stella" (Grieg), (c) "Mazurka, Af Musique de Ballet" (Malling).
9.33: Baritone—Mr. A. W. Alloo, (a) "The Carpet" (Sanderson), (b) "Sea Fever" (Ireland).
9.49: 'Cello solos—Mr. Phil Palmer, (a) "Bourre" (Handel), (b) "Serenata" (Moszkowski).
9.50: Chorus with orchestra—Mixed Chorus, "Sea Songs" (H.M.V. EB25).
9.54: Soprano—Miss Rae Stubbs. "Waltz Song" from "Merrie England" (German).
9.58: Instrumental trio—4YA Broadcasting Trio. "Scherzo Af Octet, Op. 166" (Schubert).
10.2 : God Save the King.

Saturday, January 18

1YA, AUCKLAND (900 KILOCYCLES)—SATURDAY, JANUARY 18.

3.0 : Afternoon session, including literary selection by the Announcer.
4.30: Close down.
5.0 : Children's session, conducted by Cinderella.
6.0 : Dinner session—"Columbia" and "Regal" Hour:
Geoffrey Gelder and his Kettners Five—"Funny Face" selection (Gershwin) (Regal 20557).
Xylophone—Victor Sterling, "Sons of the Brave" (Bidgood).
Hawaiian—Aloha Players, "E Mama Ea" (Kachu) (Col. 01279).
6.13: Tacet.
6.15: 'Cello—W. H. Squire, "Andantino" (Lemare) (Col. 04158).
Bournemouth Municipal Orchestra, (a) "Dancer of Seville" (Grunow); (b) "The Two Imps" (Alford) (Col. 02745).
6.27: Tacet.
6.30: Hawaiian—Kamehameha Alumni, "Ka Moae" (Hiram) (Col. 01257).
Violin—Sascha Jacobsen, "Pale Moon" (Kreisler) (Col. 01146).
Organ—Gatty Sellars, "Gipsy Caravan March" (Oscheit) (Col. 01384).
Saxophone—Rudy Wiedoeft, "Serenade Badine" (Marie) (Col. 01472).
6.42: Tacet.
6.45: Instrumental Octet—J. H. Squire Celeste Octet, (a) "Two Eyes of Grey" (McGeoch); (b) "I Love the Moon" (Rubens) (Col. 01213).
Plaza Theatre Orchestra, (a) "My Lady Dainty" (Hesse); (b) "The Busy Bee" (Bendix) (Col. 01438).
6.57: Tacet.
7.0 : News and market reports.
8.0 : Chimes.
8.1 : Orchestra—1YA Orchestral Octet, conducted by Mr. Eric Waters, "Trovatore" (arrgd. Langey).
8.10: Tenor—Mr. A. Fogerty, (a) "Because" (D'Hardelot); (b) "Out of the Darkness" (D'Hardelot).
8.16: Organ—Terance Casey, "Annie Laurie—Novelty Variations" (arrgd. Casey) (Col. 02842).
8.20: Novelty Vocal Trio—The Snappy Three, (a) "When My Dreams Come True" (Berlin); (b) "I'll Always be in Love with You" (Stept).
8.26: Baritone—Mr. Fred Baker, "Bedouin Love Song" (Pinsuti).
8.30: Waltz—1YA Orchestral Octet, "Morning Journals" (Strauss).
8.38: Elocution—Miss Lynda Murphy, "Red Riding Hood" (arrgd. Eric Waters).
8.42: Novelty—Flanagan Bros., "McGonagle Taste" (Irish Hornpipe).
8.45: Vocal duet—Isobel Baillie and Nellie Walker, "Barcarolle" from "Tales of Hoffman" (Offenbach) (Col. 02935).
8.49: Orchestra—1YA Orchestral Octet, "By the Blue Hawaiian Waters" Ketelbey).
8.58: Weather forecast and announcements.
9.1 : Baritone—Mr. Fred Baker; (a) "The Border Ballad" (Cowan); (b) "Young Tom o' Devon" (Russell).
9.8 : Organ—Terance Casey, "Keys of Heaven—Novelty Variations" (arrgd. Casey) (Col. 02842).
9.12: Novelty vocal trio and piano solo—The Snappy Three, (a) "Come West, Little Girl, Come West" (Donaldson); (b) "High upon the Hilltop" (Whiting); (c) Piano Jazz Number.
9.21: Soprano—Anna Case, "Doreen" (McGee) (Col. 01669).
9.24: Orchestra—1YA Orchestral Octet, "Brahmsiana" (arrgd. Langey).
9.33: Tenor—Mr. Fogerty, (a) "I Gathered a Rose"; (b) "I Hear a Thrush at Eve" (Cadman).
9.39: Hawaiian—Silver String Quartet, (a) "Kawaihau Waltz"; (b) "Honolulu March" (Traditional) (Col. 01280).
9.45: Elocution—Miss L. Murphy, (a) "I Don't Know"; (b) "A Good Girl" (arrgd. Eric Waters).
9.51: Orchestral—1YA Orchestral Octet, Two Syncopated Pieces, (a) "Moon Magic"; (b) "Rose of Samarkand" (Coates).

10.0 : "His Master's Voice" Dance Programme:
Tango—Hamp's Kentucky Serenaders, "Mia Bela Rosa" (Kochler).
Foxtrot—George Olsen and His Music, "Dream Mother" (Lewis).
Foxtrot—George Olsen's Music, "A Garden in the Rain" (Gibbons).
Waltz—Connecticut Yankees, "Bye and Bye, Sweetheart" (Yellen).
Waltz—Arcadians' Dance Orchestra, "Just a Little Fond Affection" (Nicholls) (Zonophone 5216).
10.15: Baritone—Maurice Chevalier, "Wait 'Till you se Ma Cherie" (Robin).
Foxtrot—Leo Reisman's Orchestra, "Josephita" (Klages).
Foxtrot—Arcadians' Dance Orchestra, "In Old Vienna" (Nicholls).
Foxtrot—Jack Hylton's Orchestra, "Up in the Clouds" (Ruby).
Waltz—Bert Firman's Dance Orchestra, "Sunset Down in Somerset" (Evans) (Zonophone EE96).
10.30: Comedian—Vaughan de Leath, "Kentucky Babe" (Geibel).
Foxtrot—Jack Hylton's Orchestra, "Thinking of You" (Ruby).
Foxtrot—Rhythmic Eight, "You Don't Like It, Not Much" (Kahn).
Waltz—Troubadours, "Pagan Love Song" (Freed) (EA558).
10.45: Baritone—Maurice Chevalier, "Louise" (Robin) (EA542).
Foxtrot—Warin's Pennsylvanians, "I Used to Love Her in the Moonlight" (Lewis) (E0558).
Foxtrot—Jesse Crawford and Orchestra, "I've Got a Feeling I'm Falling" (Link) (EA566).
Waltz—Jesse Crawford and Orchestra, "She's a New Kind of Old-Fashioned Girl" (EA566).
11.0 : God Save the King.

2YA, WELLINGTON (720 KILOCYCLES)—SATURDAY, JANUARY 18.

12.0 : Chimes. Results of first day of the Summer Meeting of the Wellington Racing Club, interspersed with studio items.
5.0 : Children's session, conducted by Uncle Toby.
6.0 : Dinner music session—"Parlophone" Hour:
Selection—Edith Lorand Orchestra, "The Vagabond King" (Friml).
Waltz—Dajos Bela Orchestra, "The Swallows" (Strauss) (A4010).
6.12: Tacet.
6.15: Frank Westfield's Orchestra, "Chu Chin Chow" (Norton) (A2678).
Piano and orchestra—Raie da Costa and orchestra, "When Day is Done" (de Sylva) (A4041).
Wurlitzer organ—Leslie Harvey, "Absent" (Metcalfe) (A2728).
6.29: Tacet.
6.30: Waltzes—Dajos Bela Orchestra, (a) "Oh, Spring, How Fair Thou Art" (Lincke); (b) "Songe d'Amour Apre le Bal" (Czilbulka) (E10602).
Dajos Bela Orchestra, "Humoresque" (Dvorak) (E10559).
6.42: Tacet.
6.45: Dance Orchestra—Dorsey Bros.' Orchestra, "Was it a Dream?" (Coslow) (A2567).
Wurlitzer organ—Leslie Harvey, "Until" (Sanderson) (A2728).
Waltz—Dajos Bela Orchestra, "Faust" (Gounod) (A4010).
6.55: Tacet.
7.0 : News session, market reports and sports results.
7.40: Lecturette—Mr. W. M. Jackson, "Gladioli and Gardening Hints."
8.0 : Chimes.
Overture—2YA Salon Orchestra, under the conductorship of Mr. Mat Dixon, "In a Chinese Temple Garden" (Ketelbey).
8.9 : Quartet—Melodie Four, "You're as Welcome as the Flowers in May" (Shattuck).
8.13: Steel guitar duo—Berthold and Bent, (a) "Honey" (Simons-Gillespie-Whiting); (b) "Old Man Sunshine" (Dixon-Warren).
8.20: Tenor—Mr. Frank Bryant, (a) "Look Down, Dear Eyes" (Fisher); (b) "Achal by the Sea" (O'Hara).
8.27: Humour—Mr. Will Yates, "Trying a Magistrate" (Toole).
8.34: Instrumental—2YA Salon Orchestra, (a) "Andantino" (Lemare); (b) "Motor Ride" (Bidgood).
8.42: Bass—Mr. W. W. Marshall, "A Bandit's Life" (Harper).
8.46: Soubrette—Mrs. M. R. Lightbody, "Little Sun Bonnet of Blue" (Hemery).
8.50: Mixed voices with orchestra—Light Opera Company, gems from "Hold Everything" (de Sylva, Brown, Henderson).
8.54: 2YA Salon Orchestra, request item.
9.2 : Weather report and announcements.
9.4 : Quartet—Melodie Four, request item.
9.8 : Steel guitar duo—Berthold and Bent, (a) "Weary River" (Clarke and Silvers); (b) "Kawaikau Waltz" (Kealakai).
9.15: Baritone—Mr. R. S. Allwright, "Wimmen! Oh, Wimmen" (Phillips).
9.19: Musical comedy selection—2YA Salon Orchestra, "Stop Flirting" (Gershwin).
9.27: Humour—Mr. Will Yates, "Radio Advertising."
9.34: Accordions—Fomeen Trio, "Oriental One-Step" (Fomeen) (Zono.).
9.37: Tenor—Mr. Sam Duncan, "The Lass with the Delicate Air" (Arne).
9.41: Soubrette—Mrs. M. R. Lightbody, "Catch Me" (Cooper).
9.45: Wurlitzer organ—Reginald Foort, "In the Heart of the Sunset" (Nicholls) (H.M.V. B3044).
9.48: Quartet—Melodie Four, "Queen of the Night" (Lincke).
9.52: 2YA Salon Orchestra, dance novelties.
10.0 : "Brunswick" Dance Programme:
Foxtrot with vocal chorus—Bob Haring's Orchestra, "Louise" (Robin).
Foxtrot with vocal chorus—Colonial Club Orchestra, "Peace of Mind" (Dyrenforth) (4356).
Foxtrot—Bob Haring's Orchestra, "Huggable, Kissable You" (Bibo).
Foxtrot—Al Goodman's Orchestra, "Yours Sincerely" (Rodgers) (4364).
Foxtrot—Colonial Club Orchestra, "The One in the World" (Little).
Waltz with vocal chorus—Colonial Club Orchestra, "My Heart is Bluer Than Your Eyes" (Bryan) (4364).
10.18: Male trio—Earl Burnett's Biltmore Trio, "Love Me, or Leave Me" (Kahn) (4336).
Foxtrot—Bob Haring's Orchestra, "Fioretta" (Romilli) (4288).
Foxtrot—Ray Miller's Orchestra, "In My Garden of Memory" (Buckley) (4352).
Novelty foxtrot—Anglo-Persians, "Dance of the Paper Dolls" (Tucker).
10.30: Foxtrot with vocal chorus—Ray Miller's Orchestra, "Moonlight and Roses" (Lemare) (4352).
Waltz—Bob Haring's Orchestra, "Dream Boat" (Henry) (4288).
Violin solo—Frederick Fradkin, "Nola" (Arndt) (4318).
Foxtrot with vocal chorus—The Pleasure Bound Orchestra, "Just Suppose" (4357).
Waltz—Regent Club Orchestra, "Just Another Kiss" (Davis) (4357).
10.45: Tenor—Freddie Rose, "You Left Me Out in the Rain" (Rose) (4415).
Foxtrot—Carl Fenton's Orchestra, "What a Day!" (Woods) (4411).
Foxtrot—Colonial Club Orchestra, "Leave Me a Beautiful Melody" (Spier-Coslow) (4256).
Foxtrot—Carl Fenton's Orchestra, "Maybe—Who Knows?" (Tucker-Schuster-Etting) (4421).
Foxtrot—Colonial Club Orchestra, "Naughty Eyes" (Ford-Locke).
11.0 : God Save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES).—SATURDAY, JANUARY 18.

3.0 : Afternoon session.
4.30: Close down.
5.0 : Children's hour, conducted by Aunt Pat, Jack Frost and Sunny Jim.
6.0 : Dinner session—"Columbia" hour:
Selection—Debroy Somers' Band, "The Desert Song" (Romberg (02700).
Waltz—Eddie Thomas' Collegians, "Moments with You" (Shilkret).
Mandolin Band, "Turn to Surriento" (De Curtis) (01210).
6.12: Tacet.
6.15: Waltzes—International Concert Orchestra, (a) "Over the Waves" (Rosas); (b) "Danube Waves" (Ivanovici) (Zono. EF3).
Hilo Hawaiian Orchestra, (a) "Kawaihau Waltz" (Kealakai); (b) "My Hula Love" (B2799).
6.27. Tacet.
6.30: Wurlitzer Organ—"Merchant of Venice" Suite (Rosse); 1. Prelude; 2. Intermezzo; 3. Oriental March (02796).
Mandolin Band—"Stephanie Gavotte" (Czilbulka) (01210).
Saxophone—Rudy Wiedoeft, "Serenade" (Drigo) (01180).
6.42: Tacet.
6.45: Waltz—International Concert Orchestra, "Gypsy Love" (Lehar).
New Light Symphony Orchestra, (a) "Barcarolle" (Offenbach); (b) "Cavalleria Rusticana—Intermezzo" (Mascagni) (B2377).
Waltz—International Concert Orchestra, "Sweetheart" (Strauss).
6.59: Tacet.
7.0 : News and information session.
8.0 : Chimes.
8.1 : Overture—Paul Phiteman's Orchestra, "Rhapsody in Blue" (Gershwin).
8.9 : Soprano—Miss Nora Gray, (a) "Flower Fetters" (Willeby); (b) "The Key to Your Heart" (Willeby).
8.15: The Chatterboxes in 20 minutes of mirth and melody:
Sketch—"After the Reunion Dinner" (French).
Duet—"Beautiful Ohio"; "Just a Song at Twilight" (Molloy).
Concerted Number—"And the Answers" (West).
Sketch—Four Chatterboxes, "The Winner" (French).
8.37: Violin solo—Miss Irene Morris, "Chanson Valse" (Poussard).
8.41: Baritone—Mr. Leslie Fleming, "La Paloma" (Yradier).
8.45: Humour—Mr. George Titchener, "My Word, You do Look Queer."
8.50: Instrumental Trio—Christchurch Broadcasting Trio, "Three Dances—Valse, Minuet, Gavotte" (Helmsberger, Shield, Sinding).
9.0 : Weather forecast and announcements.
9.2 : Band of H.M. Coldstream Guards, "Musical Switch" (Alford) (H.M.V.).
9.10: Soprano—Miss Nora Gray, (a) "Wings" (D'Hardelot); (b) "Just in the Hush" (Lohr).
9.15: The Chatterboxes in 20 minutes of mirth and melody:
Sketch—"Income Tax" (French).
Contralto—"Carolina Moon" (Davis and Burke).
Sketch—"Mrs. Hamblett Records Her Vote" (French).
9.34: Novelty—Shilkret's Rhythm Melodists, "When You're with Somebody Else" (Gilbert) (H.M.V. EA336).
9.3: Baritone—Mr. Leslie Fleming, (a) "Mother England's Brewing" (Coates); (b) "Nancy Lee" (Adams).
9.45: Organ—Jesse Crawford, "I've Got a Feeling that I'm Falling" (Rose).
9.48: Humour—Mr. George Titchener, "My Motor Bike" (Rouse).
9.53: Instrumental—Christchurch Broadcasting Trio, (a) "The Golden Wedding" (Marie); (b) "Serenade" (Widor); (c) "Bolero".
10.0 : "Brunswick" Dance programme:
Foxtrot—Six Jumping Jacks, "The Whoopee Hat Brigade" (Siegel).
Foxtrot—Cotton Pickers, "No Parking" (Chase) (4440).
Foxtrot—Six Jumping Jacks, "Piccolo Pete" (Baxter) (4457).
Waltz—Bob Haring's Orchestra, "I Love You" (Fisher) (4458).
10.12: Vocal—Al Jolson, "Liza" (Kahn) (4402).
Foxtrot—Cotton Pickers, "St. Louis Gal" (Robinson) (4440).
Foxtrot—Cotton Pickers, "Moanin' Low" (Dietz) (4446).
Foxtrot—Lyman's California Orchestra, "Suzanna" (Ward) (4423).

Foxtrot—Al Goodman's Orchestra, "After Thinking it Over" (Davis).
Foxtrot—Bob Haring's Orchestra, "Song of Siberia" (Lewis) (4403).
10.30: Organ and vibraphone—Lew White, "Honey" (Simons) (4386).
Foxtrot—Lyman's California Orchestra, "Junior" (Donaldson) (4423).
Foxtrot—Bob Haring's Orchestra, "The Moonlight March" (Newman).
Foxtrot—Bob Haring's Orchestra "At Close of Day" (Klages) (4458).
Waltz—Colonial Club Orchestra, "My Song of the Nile" (Bryan) (4486).
10.45: Vocal duet—The Dixie Stars, "Sweet Mandy" (4459).
Foxtrot—Carl Fenton's Orchestra, "The World's Greatest Sweetheart."
Foxtrot—Colonial Club Orchestra, "If You Believed in Me" (Gilbert).
Foxtrot—Carl Fenton's Orchestra, "Smiling Irish Eyes" (Ruby) (4467).
Foxtrot—Carl Fenton's Orchestra, "Love is a Dreamer" (Green) (4466).
11.0 : God Save the King.

4YA, DUNEDIN (650 KILOCYCLES)—SATURDAY, JANUARY 18.

3.0 : Chimes. Selected gramophone items.
4.30: Close down.
5.0 : Children's hour, conducted by Aunt Anita.
6.0 : Dinner session—"Parlophone" Hour:
Edith Lorand Orchestra, "Johann Strauss" fantasia (Strauss) (A4044).
Piano and Orchestra—Raie da Costa and Orchestra, "When Day is Done" (de Sylvia) (A4041).
6.12: Tacet
6.15: Hawaiian—David Kaili, "Honolulu March" (A2464).
Kinema organ—Leslie Harvey, "Where the Shy Little Violets Grow" (Warren) (A2695).
Waltz—Dajos Bela Orchestra, "The Grenadiers" (Waldteufel).
Saxophone—Arnold Brilhart, "Fascination" (Bernie) (A2676).
6.28: Tacet.
6.30: Waltz—Dajos Bela Orchestra, "Polish Life" (Nedbal) (A4008).
Piano and Orchestra—Raie da Costa and Orchestra, "Sweetheart, I'm Dreaming of You" (Carter) (A4041).
Dajos Bela Orchestra, "Dancing Demoiselle" (Falle) (A4008).
6.42: Tacet.
6.45: Selection—Edith Lorand Orchestra, "Dollar Princess" (Fall) (E10512).
Waltz—Dajos Bela Orchestra, "Casino Tanze" (Gungl) (A4081).
6.57: Tacet.
7.0 : News and information session.
8.0 : Relay of programme from 3YA, Christchurch.
10.0 : "H.M.V." dance programme.
Foxtrot—Rhythmic Eight, "Don't Be Like That" (Gottler).
Foxtrot—Jack Hylton's Orchestra, "Sweetheart of All My Dreams" (Fitch) (EA540).
Foxtrot—Arcadians' Dance Orchestra, "Pokee-okee-oh" (Butler).
Foxtrot—Jack Hylton's Orchestra, "I Lift Up My Finger and say Tweet Tweet". (Sarony) (EA540).
10.12: Wurlitzer organ—Jesse Crawford, "A Precious Little Thing Called Love" (Davis) (EA536).
Foxtrot—Geo. Olsen's Music, "I'm Bringing a Red, Red Rose" (Kahn).
Foxtrot—Nat Shilkret's Orchestra, "One For All, All For One" (Trent)
Foxtrot—Heidt's Orchestra, "I'm Kr-razy For You" (Jolson) (EA539).
Waltz—Arcadians Dance Orchestra, "That Old-time Organ Melody" (Carlton) (Zonophone EE155).
10.30: Contralto—Lupe Velez, "Mi Amado" (EA535).
Foxtrot—Geo. Olsen's Music, "Come West, Little Girl, Come West" (Kahn) (EA537).
Foxtrot—Nat Shilkret's Orchestra, "I'm Thirtsy for Kisses, Hungry for Love" (Davis) (EA528).
Foxtrot—Nat Shilkret's Orchestra, "Some Sweet Day" (Shilkret).
Foxtrot—Waring's Pennsylvanians, "My Mother's Eyes" (Gilbert).
10.45: Wurlitzer Organ—Jesse Crawford, "Carolina Moon" (Davis) (EA536).
Foxtrot—Kassels in the Air"—"He, She and Me" (Newman) (EA532).
Foxtrot—Park Central Orchestra, "Sally of My Dreams" (Kernell).
Waltz—Connecticut Yankees, "Coquette" (Berlin) (EA532).
Waltz—Shilkret's Orchestra, "Lady Divine" (Shilkret) (EA531).
11.0 : God Save the King.

Sunday, January 19

1YA, AUCKLAND (900 KILOCYCLES)—SUNDAY, JANUARY 19.

3.0 : Afternoon session—Selected studio items.
4.0 : Literary selection by Announcer, further studio items.
4.30: Close down.
6.0 : Children's Song Service, conducted by Uncle Leo.
6.55: Relay of Divine Service from Pitt Street Methodist Church. Preacher: Rev. W. Walker. Organist: Mr. R. B. Bickerton. Conductor: Mr. W. Leather.
8.30: (Approx.)—Relay of concert from Albert Park, by the Auckland Municipal Band, under the conductorship of Mr. Christopher Smith.
9.45: God Save the King.

2YA, WELLINGTON (720 KILOCYCLES)—SUNDAY, JANUARY 19.

3.0 : Afternoon concert session.
4.30: Close down.
6.0 : Children's song service, conducted by Uncle George, assisted by the Cambridge Terrace Congregational Sunday School Choir.
7.0 : Relay of evening service of Taranaki Street Methodist Church. Preacher, Rev. T. R. Richards. Organist and choirmaster, Mr. H. Temple White.
8.15: (approx.) Studio concert.
Hymn—Port Nicholson Silver Band, "Jerusalem the Golden" (arrgd. L. Ormrod).
Meditation—The Band, "Sanctuary of the Heart" (Ketelbey).
Contralto—Miss Nora Greene, "But the Lord is Mindful" (Mendelssohn).
Overture—St. Louis Symphony Orchestra, "Fingal's Cave" (Mendelssohn) (H.M.V. D1299).
Tenor—Mr. Wm. Renshaw, "Where e'er You Walk," from "Semele" (Handel).
Choral—Sheffield Orpheus Male Voice Choir, "The Long Day Closes" (Chorley) (Regal G30008).
Baritone—Mr. Ernest Short, "The Lord is My Light" (Allitsen).
Selection—Port Nicholson Silver Band, "Savoy American" (Somers).
Weather report and announcements.
Selection—New Queen's Hall Orchestra, "Finlandia" (Sibelius).
Contralto—Miss Nora Greene, "The Promise of Life" (Cowan).
Selection—Port Nicholson Silver Band, "Nachtlager in Granada" (Kreytizer).
Tenor—Mr. Wm. Renshaw, "My Dreams" (Tosti).
Trombone solo with band accompaniment—Bandsman Matson, "The Joy Wheel" (Sutton).
Chorus—Victor Mixed Chorus, "Songs of Scotland" (H.M.V. EB23).
Selection—Port Nicholson Silver Band, "Our Miss Gibbs" (arrgd. Douglas).
Baritone—Mr. Ernest Short, (a) "The Windmill" (Nelson); (b) "The Call of the Wild" (McGeogh).
Waltz—Port Nicholson Silver Band, "Carolina Moon" (Davis).
March—"Our General" (Ormrod).
God Save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—SUNDAY, JANUARY 19.

3.0 : Afternoon concert session.
4.30: Close down.
5.30: Children's song service by children of Church of England Sunday Schools.
6.15: Chimes.
6.30: Selected gramophone items from the studio.
7.0 : Relay of evening service from Holy Trinity Church of England, Avonside. Preacher: Rev. O Fitzgerald. Organist and Musical Director: Mr. Arthur Lilly, A.R.C.O.
8.15: Orchestral suite—New Queen's Hall Light Orchestra, "Peer Gynt Suite—(1) Morning, (2) Death of Ase" (Grieg) (Col. L1516).
8.23: Baritone—Mr. Sydney Armstrong, (a) "City of Laughter and Tears" (Nicholls; (b) "You Will Never Grow Old" (Drummond).
8.30: 'Cello—Mr. Harold Beck, (a) "Nocturne Op. 19, No. 4" (Tschaikowsky); (b) "March On" (Benjamin).
8.34: Mezzo-soprano—Mrs. Sen. Jowett, "Summer is Here" (Russian Folk Song).
8.38: Instrumental Trio—Christchurch Broadcasting Trio, "Allegro Vivace from Trio in D Major" (Beethoven).
8.50: Baritone—Mr. Sydney Armstrong, "Little Town in the Old Country Down" (Monte Carlo).
8.54: Orchestral Suite—New Queen's Hall Light Orchestra, "Peer Gynt Suite—(1) Anitra's Dance, (2) Dance of the Imps, (3) Solveig's Song" (Grieg).
9.2 : Male choir—Male Choir of Vienna, "Der Tanz" (Schubert).
9.6 : Instrumental Trio—Christchurch Broadcasting Trio, "Serenade" from "A Little Night Music" (Mozart).
9.18: Mezzo-soprano—Mrs. Sen. Jowett, (a) "Birds in the Night" (Sullivan); (b) "Our Little Home" (Coates).
9.25: Selection—J. H. Squire's Celeste Octet, "Perpetuum Mobile" (Weber).
9.30: God Save the King.

4YA, DUNEDIN (650 KILOCYCLES)—SUNDAY, JANUARY 19.

3.0 : Chimes. Selected gramophone items.
4.30: Close down.
5.30: Children's song service, conducted by Big Brother Bill.
6.15: Close down.
6.30: Evening service relayed from Hanover St. Baptist Church (Preacher, Rev. Lawrence North; Organist, Mr. Upton Harvey; Choirmaster, Mr. Desmoulins).
7.45: Overture—St. Louis Symphony Orchestra, "Fingal's Cave" (Mendelssohn) (H.M.V. D1299).
7.53: Negro Spirituals—Paul Robeson, (a) "I Got a Home in dat Rock" (H.M.V. B2727), (b) "My Lord, what a Mornin'" (Burleigh).
7.59: Polonaise—Berlin State Opera Orchestra, "Polonaise No. 2" (Liszt).
8.7 : Choral—Westminster Abbey Special Choir, "Exsurge Domine" (Byrd).
8.11: Piano solo—Harold Bauer, "Etude in D Flat" (Liszt) (H.M.V. DB1282).
8.15: Relay of concert from 3YA, Christchurch.
9.30: God Save the King.

Making Accumulators.

COULD you tell me how I could use old negative accumulator plates to make a "B" battery? asks "A.D.B." (Raetihi).

A.: See an article by Megohm in the issue of the "Radio Record" dated July 29, 1927.

Trouble with the Browning-Drake.

I AM having trouble with the 2R.F. Browning-Drake, writes L.J.T. (New Plymouth). I am using an electrolytic "B" eliminator with two tappings, and although I have tried different coils and altered their positions as well as the capacity of the neutralising condenser, I cannot prevent the set from oscillating violently. The boxes for each stage were larger than those specified, otherwise the instructions have been followed. I have latterly introduced the parallel feed method, but the set still oscillates with the tickler short-circuiting. I have also tried several valves in the R.F. stages.

A.: Look for an open circuit in the neutralising condenser to either valve. There may be coupling between the R.F. stages due to too many leads being taken from the same taps of the eliminator. Place audio frequency chokes in the "B" leads of the transformer, and on the set side of these connect a 1 mfd. condenser to B—. Examine the primary coils, making certain that there is not a short circuit. Reduce the number of plates in the neutralising condensers to at least three, one moving and two fixed. Valves of the 201A class should be used in the R.F. stages, and require about 15 turns on the primary. In last week's issue, we published an article dealing with the stabilising of two stages of radio frequency. The correspondent committed an error when he made the shield boxes larger than those specified. In a set such as this there should be no deviation from the specifications given.

2. Which is the best way to neutralise this set?

A.: When the condenser is of sufficiently small capacity (3 plates) tune in a distant station such as Wellington or Christchurch and increase reaction until the set oscillates. Adjust the neutralising condenser controlling the valve nearest the detector until the set stops oscillating, and further advance reaction until oscillation recommences. Again adjust the neutralising condenser, and further advance the tickler. Do this until further movement of the neutralising condenser will not prevent the set oscillating. Leave the condenser in the position which causes the tickler to be advanced to the greatest degree without causing oscillation. Now repeat the process for the other valves. It may be necessary to do this on other stations about the middle of the dial.

3. Would the eliminator cause this trouble?

A.: Yes, it might quite easily be responsible. Coupling takes place between the radio-frequency valves. Insert a choke between the R.F. lead and a by-pass condenser between this and B— to keep the radio-frequency currents out of the eliminator.

Wireless Literature.

CAN you recommend a good book on wireless for a beginner wishing to learn something of the technical side of theory and constructions? asks "H.J.P." (Blenheim).

A.: We know of no better publication for the beginner than our own "Radio Listeners' Guide." There is a rather regrettable deficiency of radio text books. Publications from America such as "Radio News" and its incidental publications, "Radio," and "Radio Broadcast," are excellent periodicals for those who are slightly advanced in wireless technicology, but there has been very little effort on the part of any American firm to cater for the beginner. Because of the similarity between ours and American conditions and between these and the English conditions American publications are more valuable to the New Zealand reader than English publications.

A Noisy Transformer.

I HAVE replaced an audio transformer by one that causes a continual whistle in the speaker. I cannot get beyond the New Zealand stations because of it.—"J.B." (Murchison).

A.: Try reversing the connections to the primary and earth the case and core.

"A" Battery Charger.

IN an old issue of the "Radio Record" an "A" battery charger was described, and in the "Listeners' Guide" appeared the information for a 1.3 amp. charger. There are a few points I would like cleared up.

1. Is it necessary to put a layer of empire cloth and shellac between each layer of the secondary?

A.: It is preferable to do this for the sake of greater insulation.

2. When the primary is wound with 24 D.C.C. wire is it still necessary to place the paper strips between the layers?—Yes.

3. Is 18 D.C.C. heavy enough wire for the secondary winding for the 3-6 amp. charger?—Yes.

4. Is the secondary winding for the 3-6 amp. charger the same as for the 1.3 charger?

A.: With the exception of the heavier wire, yes.

5. At what number of turns does the switch come on to?

A.: In the later specification a switch is not employed unless placed in series with the primary.

6. Which is the best method of controlling the output? Resistance lamps or variable resistances?

A.: Variable resistances.

7. Would the 3-6 amp. charger be suitable for charging a 4-volt 80-amp. accumulator, and 154-volt wet "B" battery?

A.: It would be suitable for the "A" accumulator, but not for the "B."

8. Could you tell me the total consumption of my set? I am using Condor valves.

A.: The requisite information for the Condor valves is difficult to obtain, so we are afraid we cannot supply you with the information you require.

An Eliminator Problem.

I HAVE built up the eliminator similar to that in the Listeners' Guide, but have slightly increased the number of turns on the secondary, and made a few other alterations (here the correspondent enumerates the details of his set). What would be the output at 20 milliamps. drain?—"C.E." (Nelson).

A.: About 180 volts.

2: Would it be capable of running two 625A's in the last stage?

A.: Yes, but the voltage may drop to 150 volts.

3: What would be the approximate capacity of a condenser with paper insulations which measures 4 x 2½ x ½in.?

A.: Probably about 2 mfds., but it would be unsafe to use this in eliminator work as the voltage test could not be very high.

4: What is the approximate value of a mica condenser 3 x 3 x ½in.?

A.: Probably 1 or 2 mfds. rated to stand 200 volts working.

5: My eliminator runs for six hours and consumes 1/10th unit. Is this a good performance?

A.: Yes.

Amateur Transmitting.

WILL you answer the following inquiries concerning various matters? writes "R.D." (Te Kuiti).

1: The power of the usual amateur transmitters, the number of valves and their cost?

A.: Communicate with the secretary of the N.Z. A.R.T., c/o Superadio, Ltd., Queen Street, Auckland.

2: Is it advisable to have separate transformers to supply the filament current to alternating current valves with varying voltages?

A.: It is necessary to have different windings, but they need not necessarily be different transformers.

3: Is a condenser in series with the pick-up lead to the detector necessary?

A.: No.

4: Where can I obtain a copy of the 1928-1929 edition of the Radio Listeners' Guide?

A.: Try Te Aro Book Stores, Wellington.

Improving a Four-Valve Set.

I HAVE a screen-grid four-valve set which I have made up from a popular kit. How can I improve my set without great expense?—"Mons" (Palmerston).

1. I have heard that better transformers than those supplied with the sets can be used.

A.: The transformers in this set are reasonably good, and unless they burn out, it would not be advisable to change them. Introducing other components into a kit set is not wise unless the owner has a very wide knowledge of radio. We should advise you to dispense with your set and either build another or purchase one of the many excellent neutrodynes.

2. I am using a "B" eliminator, but on stations below Christchurch reception is harsh and hoarse. Could I remedy this with a different grid leak?

A.: It would be advisable to try another, preferably slightly lower. See that your set has by-pass condensers between the screen grid and earth and between the plate and earth. The capacity of the condensers should be about 1 mfd.

3. Could I convert to an ordinary four-valve set by dispensing with the screen-grid? Would it require any great alterations, and would it be an advantage?

A.: We would not advise you to tamper with this more or less commercial receiver.

4. I can tune in a large number of carrier waves, but cannot get broadcast from them. Would the inclusion of a pentode valve bring in the music, etc.?

A.: Quite probably. The pentode increases volume considerably. Look for an open circuit or a high resistance connection in the aerial circuit, as this may cause you to have difficulty in tuning in the station.

5. This set whistles quite a great deal. Can I fit a neutralising condenser?

A.: Neutralising condensers are very rarely required on screen grid sets. In such cases there is rarely more than an extra turn or so at the end of the sec-

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ondary winding and the R.F. transformer.

In your case we should not advise interference. Look for the by-pass condensers previously referred to. Note—If you desire to improve your quality look to the following points:—The by-pass condensers, the value of the grid leak which should be fairly low 1-2 megohms, the speaker, which frequently causes most of the trouble, the state of the "C" battery, and the load imposed on the eliminator. If this latter cannot stand up to the drain imposed upon it the voltage will drop and the quality become spoiled.

Building an "A" Eliminator.

COULD you supply me with the following data relative to the construction of an "A" eliminator? asks "Eliminator" (Taranaki).

1: What capacity electrolytic condenser to buy?

A.: About 2500 mfds.

2: What capacity metal rectifier?

A.: You need a rectifier that will pass about 4 amps. Communicate with Johns, Ltd., Auckland.

3: What make of choke do you recommend?

A.: You will probably have to make your own. A set of standard stampings (Ballingers and Co., Wellington) filled with 22 DCC wire will probably suffice.

4: What secondary voltage is necessary to obtain (a) 4 volts rectified; (b) 6 volts rectified?

A.: (a) 6 volts; (b) 10 volts.

5: What size and number of turns of wire is best?

A.: Use 16 or 18 guage DCC wire and put on about 24 turns for the 4 volt and 35 turns for the 6 volts. A slightly greater voltage drop occurs in the metal rectifier than the valve and this must be allowed for. Test the final voltage with a voltmeter before connecting up with the set.

7: If an ABC eliminator is constructed, does the number of primary turns remain constant?

A.: Yes, but slightly heavier gauge wire is necessary. See a recent article by "Cathode" on the design and construction of power transformers.

List of Stations.

WHERE can I obtain a list of New Zealand and Australian stations and their times of operation?—"F.F." (Hokitika).

A.: The New Zealand stations have been published in recent issues of the "Radio Record." The Australian stations may be obtained from a supplement in the "Australian Wireless Weekly," published on May 31, 1929. If you cannot secure a copy of this locally, write to the publishers, Elizabeth Street, Sydney.

The Use of 245's.

"A.V.S." (Khandallah) asks the following questions relative to the 245 valve:—

1. With 250 volts on the plate should the grid bias be 50 or 100 volts?

A.: 50 volts biases the curve to the mid-point of its straight portion and causes the push-pull amplifiers to act as single valves. The 100 volts causes the bias to act from the lower curve, and if the 2-valves are regarded as acting together the curve is taken right along the straight parts of both. It is considered on the whole that biasing to the mid-point is slightly superior. On our tests we have found very little difference.

2. What output transformer should be used with a 66P unit?

A.: A 1-1 transformer.

3: What is the impedance of the 66P unit at 200 cycles?

A.: The measurements for this unit have not been published by the manufacturers, and we have not had the opportunity of making these measurements ourselves.

4. What is the maximum undistorted output that the 66P used in the improved linen diaphragm speaker would be able to handle?

A.: The exact amount is not known, but it would probably be about 3 watts.

5. Would harm be done to a 280 rectifying valve by putting 350 volts on each plate, although the specified maximum is 300 volts.

A.: It is not a good practice, but in this case will probably have very little effect.

6. In circuit diagrams of "B" eliminators the high tension is sometimes taken from one of the legs of the filament and sometimes from the centre tap of the filament coil. Which is the most satisfactory?

A.: There is very little difference, and this is in favour of the centre tap.

Note.—Full justice to two 245's in push-pull cannot be done with anything less than a dynamic cone speaker. In fact, the linen diaphragm would hardly be satisfactory.

Request for a Diagram.

WOULD you supply a diagram of a one-valve receiver capable of reaching Wellington, Auckland, and other New Zealand stations on the telephones. I would also like to search for Australian stations.—"H.F." (Levin).

A.: No. We do not encourage owners of small sets to search for New Zealand and Australian stations, for this constitutes the howling valve nuisance. Small sets such as these are not suitable for anything more than local station reception, and when they are employed on the other main stations they cause more annoyance to listeners than do any other type of set. A combination was described in a recent issue of the "Radio Record." This was to be used primarily as a crystal and amplifier, but could, with care, be used as a 1-valve receiver, but this is not advised unless the operator is careful and skilful.

D.C. Eliminators.

ACCORDING to an article published in your paper, it is a difficult matter to construct an "A" eliminator to work from D.C. mains. Several firms, however, have imported some of these, and have been used successfully. It seems to be that there must be a tremendous waste of current, and I should like to use this to light the room even with a table lamp. —"W.D." (Reefton).

A.: The point of our article was that the operating cost of an "A" eliminator hardly warranted it. In your case, you will require a lamp or lamps dissipating 460 watts. This may quite conveniently be three 150 watt lamps, which may be connected in series for use in different parts of the room or in different rooms. The valves could be short-circuited when it is desired to use the lights and not the radio set. The lights, of course, would not function as well as lights properly connected, because the voltage would be lessened (roughly 100 volts each). A 30 ohm rheostat should be connected in series with the filaments.

Charging a Battery.

RATHER unique questions concerning "A" battery charging have been raised by "Fan" (Paerau).

1. Bringing direct current across paddocks 800 yards on poles, the input at a generator 12 amps. at 6 volts, charging a 6-volt battery, what would be the output at the other end?

A.: This depends upon the type of wire used. If 7/029, which we recommend, is employed, about 5 amps. can be delivered at 6 volts.

2. I have two 60 amp. batteries and one 74. If I charge these in parallel would they discharge if I left them connected in parallel?—No.

3. My set draws about 4 amps. an hour. If three batteries were connected in parallel would the set take an equal amount from each?

A.: Other things being equal, yes.

Note: We recommend your using the fairly heavy 7/029 to prevent the wire breaking by its own weight or by any slight strain that might be imposed upon it. It is necessary to run only one wire, probably the positive (depending on which is earthed at the generator) and run the other to earth. In charging the batteries, connect the positive wire to the negative pole of the battery and the ground to the positive.

4. Could you give me a circuit of a short-wave set with two stages of radio frequency?

A.: Such sets as these are rarely used. We do not happen to have one that we could give you without going into a great deal of detail that is not covered by the scope of "Questions and Answers."

A Tip that Worked.

RE my query and your reply thereto in the "Radio Record of December 6, 1929, relating to a second aerial for a crystal set: My second aerial has been erected, and the increased volume of reception fully justifies the addition. I have also added another earth, making five, with beneficial results. The above may be a help to others depending on a crystal set for their wireless entertainment.—A.P.G. (Silverstream).

Tips and Jottings

Adjusting Grid Bias.

THE importance of switching a set off before adjusting the grid-bias voltage of any of the valves is not usually realised. While the grid-bias plug is out the valve has absolutely a free grid and the resistance of the valve drops considerably, with the result that the emission increases, and this may, in less time than it takes for you to take the plug out and put into another hole, rise to a value far in excess of the intended maximum emission of the valve, and thereby do the valve a tremendous lot of damage. All grid-bias plugs should be adjusted with both A and B batteries switched off.

Uses for Old Files.

EVEN the worst and most dilapidated of files can often be made use of for doing jobs very different from those for which they were primarily intended. A half-round tapered file, for example, makes a useful D-bit when its filing days are over. The tongue fits quite well into the jaws of the brace, and used in this way an ancient file will provide a ready means of enlarging holes drilled in ebonite. One often needs something of the kind. When, for example, jacks have to be mounted on an ebonite panel, 7-16 inch or ½-inch holes are needed in many cases. The biggest drill in the average home constructor's outfit is the 3-8-inch, which will not, of course, make the holes needed. Put this drill through first of all, then use an old half-round file in the way suggested, and the job is very quickly accomplished. If you possess an emery wheel you can grind old flat files into useful scrapers, whilst round ones may be turned in the same way into centre punches or nail punches.

Preparing Ebonite Panels.

WHEN it is desired to rub down ebonite panels to produce a matt surface in lieu of an existing polished surface, many home constructors find that unless extreme care is taken in the operation the result of using the usually recommended emery powder is a scratched surface. This effect is naturally not pleasing to the eye, and an improved finish to the work can be secured if resort is made to the use of "cream grit." This is the material used by monumental masons when rubbing down lead-lettered inscriptions, and is to be preferred to the usual emery powder.

A Pilot Lamp.

IN order to reduce the risk of leaving a radio set switched on all night, it is advisable to fit a warning lamp to indicate when the filaments are switched on. A flash-light bulb, having a low-current consumption and a suitable holder, should be procured and wired directly across the filament terminals of any convenient valve-holder in the receiver. If the set has provision for gramophone reproduction arranged in such a way that the radio-frequency stages are automatically switched off, precautions must be taken to ensure that the lamp is operative when the gramophone pick-up is in use.

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A Power-pack for "250" Valves

Continued from last week

THE one or two dividers may be mounted upright on a small block of wood attached to the baseboard by a screw. If two dividers are used, only one is tapped, the connections being made to corresponding sockets on the panel. The Pilot divider is specially mentioned because the manufacturers definitely state that two can be used in series to reduce 400 volts.

Here is another scheme of resistances in series to break down 400 volts: B— 1500 (22) 1500 (42) 4000 (90) 11,500 (400 volts); total 18,500 ohms. This would run a high "waste" current, though another 1000 or 2000 ohms would be added for bias resistors. Any scheme can be made up of separate resistances, and by further dividing up the resistance values, a greater variety of voltages may be obtained. The objections to using a number of separate resistances in series are bulk and expense. Nothing but wire-wound resistances must be considered in any part of the eliminator circuit, excepting perhaps the detector and R.F. outputs if additional reduction is required.

It should be remembered that the greater the amount of current flowing through a resistance, the greater is the drop in voltage, so that when a heavy return plate current traverses the bias resistors, a lower value will be required to give a certain bias than that necessary to produce the necessary drop when the return current is small.

Grid Bias from Voltage Drop.

THE simplest method of obtaining grid-bias of two or more voltages is by extending the voltage divider resistance beyond B— and from this extra resistance tapping off the voltages required. The method of connecting up this system is shown in the diagrams.

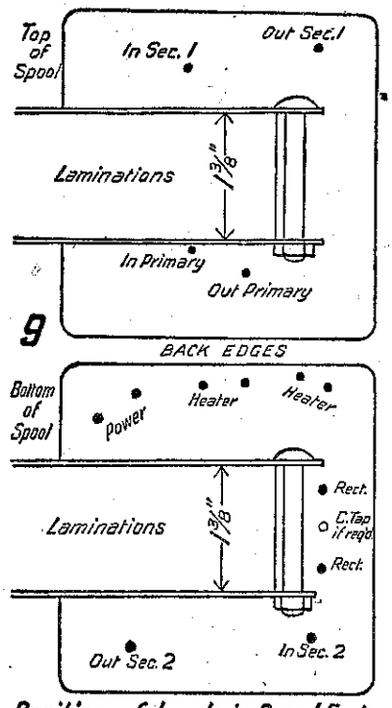
An important point to note when using this system is that the plate current for the whole receiver and also the "waste" current return to the transformer through the bias resistance, so that its carrying capacity must be high, say, about 40 watts dissipation. For this reason composition resistances are useless, as they would burn out rapidly, and only wire-wound types may be considered. Neither will it be permissible to use composition resistances that have wire contacts in the form of staples, giving the uninitiated an appearance of being wire-wound.

In order to provide a variable resistance having good heat-dissipating qualities, the writer has found the use of 400-ohm potentiometers to be very effective. Any number of these may be connected in series, but actually it is only necessary to employ one for each voltage required. The low bias voltage will be obtained from the arm of the resistance connected direct to B— whilst another potentiometer connected directly to the first will give a bias voltage up to about 28 or 30 volts. Should the power stage require a higher voltage than this, say 40 volts, it is an easy matter to raise the variable values by placing an extra fixed resistance of 500 to 1000 ohms between the two potentiometer resistances. Such extra resistance must have carrying capacity equal to the variable portion. The potentiometers actually used contain 36's resistance wire.

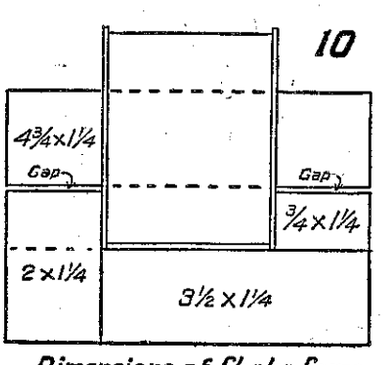
It is practically immaterial whether the B centre-tap is connected to the arm of the last bias resistance or to the end of the resistance-strip winding. Each variable arm connects to the corresponding socket on panel, or direct to the output seven-way sockets, if no panel is used. In either case the output socket at side of the container connects to its corresponding output condenser in the base.

When the amount of bias is variable it is a simple matter to adjust it by ear for best results whilst the receiver is in operation. Adjustment by means of a milliameter in the power-valve plate circuit is better still.

The highest bias voltage obtained in this way reduces the maximum plate voltage by that amount, but where, as in this case, the drop has been allowed for, it is of no consequence.



Position of Leads in Spool Ends



Dimensions of Choke Cores

This method of obtaining grid-bias is quite satisfactory for ordinary conditions, and, being variable, allows of the very best effect being obtained.

Grid Bias from Separate Rectifier.

SOME constructors may prefer to obtain the grid-bias from a separate rectifying and smoothing system. Though it mean a little additional cost, this method is the most reliable of all.

The chief additional expenditure would be a small smoothing choke, four 2 mfd. condensers, 400-volt test, a rectifying valve, and additional resistance.

The additional windings required upon the transformer are very small. The high-voltage winding consists of 860 turns of 36's s.w.g. enamelled wire, running into three layers. For the rectifier, half-wave, a 4 or 6-volt power-valve that has gone off in emission may be used, and a filament winding of 22's or 24's d.c.c. should be put on accordingly; 22 turns for 4 volts and 32 for 6 volts. The high voltage may be drawn from the centre-tap of a 50-60-ohm resistance across the filament terminals.

The rectifier and choke would be placed in front of the transformer, or better still, place the valve outside, well forward from the plate rectifiers. The condensers would be secured together to form a compact pile.

This type of bias supply was described in unit form on July 12 last, and in the All-Electric Handbook. For the present purpose a single wire-wound resistance should be used. This may consist of two 400-ohm potentiometers as in the preceding system, the only difference being that the total resistance from C + to C— must not be less than 11,000 or 12,000 ohms. To effect this, the two variable resistances may still be connected in series with any necessary extra resistance between, whilst in the connection to the return side of the high voltage winding, a 10,000 ohm fixed resistance will be included. This should be wire-wound, but may be of low dissipation, as only a few mills will be passed. The other side of the high-voltage winding connects to the rectifier grid and plate, which are both connected together.

An r.f. choke of 1000 turns of 36's enamelled wire on a flat spool should be included in the circuit before the first condensers.

The smoothing choke, which need not have a gap, may consist of 5000 turns of 36's or 40's s.w.g. enamelled wire on a 1-inch stalloy core with window about 1 3-8 × ½in. Long piece 2 3-8, short piece 1½in., if assembled without gap, which is quite permissable when the current passing does not exceed 10 mills, and a higher inductance is thus obtained.

Radio-Frequency Chokes.

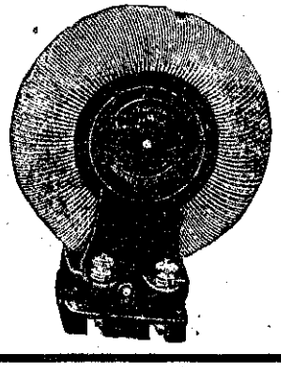
A RADIO-FREQUENCY choke of 1000 turns of 30's s.w.g. enamelled wire should be placed in each rectifier plate lead. These chokes give greater selectivity to the receiver, as they prevent radio-frequency picked up by the mains acting as aerials, from reaching the plates of the valves. A flat formation should be adopted, giving a winding about ½in. thick and 2in. diameter. Two pieces of ebonite or other insulating material 2½ inches square, and bolted together with a ⅝-inch piece of wood or ebonite lead-in tube for separation, will serve well. The total thickness should not exceed ½in.

The Diagrams.

NO. 11 shows the layout of condensers, which should be adhered to as nearly as different makes will allow. Only the connections to the top of each pair of terminals is shown. The bottom connections of each group are all jointed together, and the common output condenser lead connected to B —. The bottom terminals of the 4 mfds. are all connected together with insulated wire, and connect to secondary centre-tap and C high output. This wiring cannot be shown here without confusion, but the connection is made to the top or output lug of 2 mfd. condenser marked "CT." A 2 mfd. condenser connects to each output except power and B —, the top pair in the diagram.

No. 12 shows the "CT" connection mentioned above. This comes from the connection of the two secondary windings at the front side of the transformer. Good rubber flex should be used for this wire, which connects to lower terminal of all 4 mfds., and to high bias output as already given. The two battens or stiffeners 1 x ½in. are shown at A and B; the latter must be grooved before screwing on, at each place where a lead is shown crossing it, so that no wires cross on the outside (underneath).

The two high-tension leads from the lower end of the fuses each pass



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CROSLEY SETS	Abel, Smeeton, Ltd. Rep.: C. Buscoe, 409 Devon Street, New Plymouth.
CROSLEY RADIO	D. A. Morrison & Co., Victoria Avenue, Wanganui.
MAJESTIC, ATWATER-KENT AND RADIOLA ELECTRIC SETS	Radio House, Hamilton. G. S. Anchor, Manager.
PHILIPS VALVES AND APPARATUS	All Good Radio Dealers.

through the baseboard at C and D and proceed through the radio chokes to the plate of respective rectifiers. At E and F the leads for the rectifier filaments appear and pass through the grooves in the batten. These two leads should be kept as equal in length as convenient. Each lead connects to a filament tag on each socket, and to one end of the tapped resistance. This resistance may take any convenient form—may be made of a strip of mica or fibre about 2 by ½in., pierced with three 1-8in. holes. Sufficient length of resistance wire is wound on to give a resistance of 30 to 40 ohms, connecting to a bolt in the centre, from which B+ current flows to the first choke. Nichrome wire of not greater than 34's gauge may be used; 26 inches of 36's or 18 inches of 38's will answer well.

Looking at the diagram, the under side of the valve sockets is seen, and they are secured by screws placed the reverse way in the usual holes. In order to rise flush with the outside of the baseboard, the sockets must be of the pattern with a high raised centre, such as the Alpha, which was used in the original. The best procedure is to solder all connections and resistance to the sockets before putting the latter into place; then all is lifted in one piece and the screws placed in the sockets. Grid connections are not shown, as they are not used. The radio chokes must not be a greater thickness than ½in., the thickness of the battens. Keep all these parts clear of the space occupied by the sides of the container when closed.

Only the holes for the seven output leads are shown, as these present no difficulty. When all wiring is completed, cover with a thin sheet of cardboard and then a piece of thin sheet-iron, screwed to the battens. At G, under the transformer, fasten with screws a small piece of batten thickness and put a screw through the iron sheet into this to prevent hum. The iron must be connected to earth; its purpose is chiefly to shield the direct-current output from the rectifiers and A.C. leads. A strip may be cut away where the output leads come through the baseboard, and here it would be wise to turn back the waste piece in order to present a rounded edge to the leads.

No. 13 shows how a seven-way plug may be constructed from a 3in. dial with the knob sawn off, and a piece of ebonite about 2¾in. square. It would even be possible to use two pieces of ebonite. Clamp the two together and drill both at the same time to fit the pins. The holes in the ebonite must then be carefully enlarged to take the flush sockets. A hole is cut in the side of the container, slightly smaller than the ebonite, leaving room for screwing at the corners.

Solder-tags may be secured under the pins and the flex leads soldered on, leading out through the central hole, where they are bound together with tape to form a cable, which may be enclosed in metal gas-tubing if near a broadcast station to prevent pick-up by the leads. The metal tubing is earthed. The bevel of the dial is best placed inwards to form a grip when removing.

No. 14 shows the metal cover with turned-in edges, which latter could be dispensed with if heavy iron is used.

General Hints.

THE open portion of laminations on transformer and chokes should be tightly bound with adhesive tape to prevent rattle. A screw clamp to press the laminations together whilst binding is carried out makes the operation easier and more effective. Two clamps are better still, as one may be moved whilst the other maintains pressure.

The flexible leads for heater current may be arranged so that the free end is convenient for plugging into the receiver. This may be effected by a pair of pins spaced an inch apart in a small strip of ebonite, and neatly joined to the flex, insulating with tape. A similar strip containing two sockets is attached to the receiver or amplifier.

The flexible mains lead should be fitted with a moulded adapter, and not a wooden one. Where possible plug in to a hot-point wall socket.

Potentiometers purchased for use as grid-bias resistors must have good dissipating powers as they will get too hot, on account of the wire being too thin. The wire on these should not be thinner than 36's s.w.g. A de Jur power potentiometer of 2000 ohms resistance is obtainable, and may suit some constructors. Fixed resistors for given grid-bias values are also obtainable, but are not so convenient as a variable arrangement.

Tapped resistances for getting the electrical centre of filament or heater circuits are sold under the name of "balancers," but 30 or 40-ohm rheostats may be used, mounted on the baseboard, each end of the resistance strip connected to a filament lead. The arm connects to earth (B —) direct.

It was stated in the preliminary notice of this article that the power-pack would deliver up to 200 mills of D.C. current. Whilst it would be possible to obtain an output approaching at least near to that figure, the apparatus in its specified form would not supply it efficiently. The transformer secondaries will jointly deliver 200 mills without any overloading, and the 281 type of rectifier may quite well be made to pass nearly 100 mills each, which, although an overload, they will stand up to it well. The chokes, as already specified, must be enlarged, and it would probably be necessary to enlarge C3 to 10 or 12 mfds., in order to handle the larger current.

The total resistance to reduce 500 volts to zero is about 30,000 ohms.

Up to 3 amps. may be drawn from the rectifier and power-valve filament windings, using the turns given under the heading "2 amps."

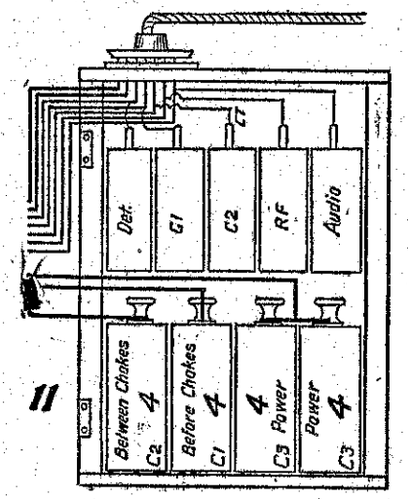
In the case of the rectifiers and two sides of the high voltage secondary, the outputs of the two sides add together to make the total output.

Constructors are advised to tap the primary winding at 1100 turns, so that in places where the mains are inclined to be habitually low the lesser number may be used. With a plug-in arrangement the turns may be varied at will.

There is no necessity to be nervous about somewhat exceeding the rated plate voltage for amplifying valves: the manufacturers generally state these rather conservatively. If in doubt over any of the diagrams, follow the theoretical for connections.

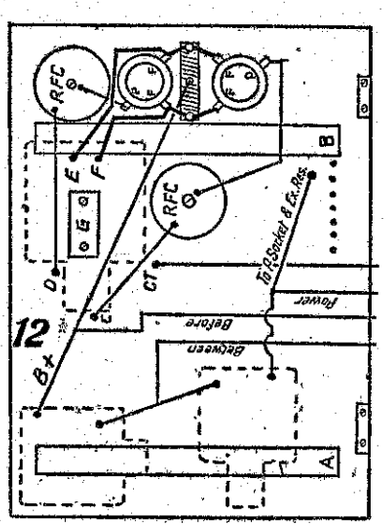
With a total output of about 60 mills, the consumption of mains current is exactly 100 watts, or 10 hours per unit of electricity. At Wellington rates this works out at ½d. per hour. Where

higher charges are in force the running cost would not exceed ½d. per hour. In addition to the milliamps output, the filament lighting is included of a pair of 281 type rectifiers, a pair of 210 type valves, and a cathode heater am-



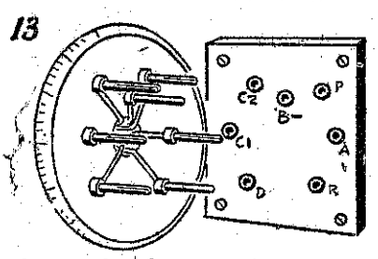
11

Condenser Layout in Base



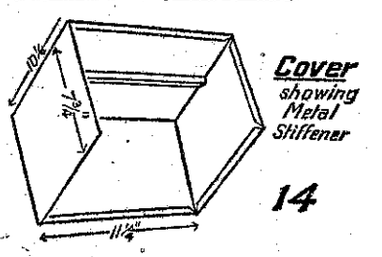
12

Wiring under Baseboard



13

Improvised 7-way Plug



Cover showing Metal Stiffener

14

plifier. These are the valves actually in use when the test was made.

Be careful in handling the high voltages—always switch off the mains before making changes. The smoothing condensers discharge themselves through the voltage divider.

This is a type of apparatus that can be carefully constructed, and works "right away" when connected up, and when that moment arrives the constructor may easily say, "Well, it was 'some job,' but well worth the trouble."

For either 210 or 250 valves the secondary turns should not be less than 2850. The maximum rated plate voltage of the 250-valve is 425 volts, and at this figure the grid bias is 83 volts, towards which an extra 200 turns may be put on each secondary, if bias is obtained from voltage drop. Otherwise, bias may be supplied from a separate rectifier, which has the advantage over voltage drop when using any two valves in push-pull, that double voltage may be applied, which gives bias to "cut off," or near rectifying point, with the maximum output, which is considerably greater than is possible with the ordinary bias valve. To get this increased output means that the first audio stage must also be capable of handling the increased volume, and it may be necessary to instal a pair of small valves in push-pull to accomplish this.

The grid-bias winding for double bias on 250's should be 1250 turns of 36's wire.

Wherever "tape" is mentioned, it is understood to be the black adhesive tape used by electricians; ¼-inch is a convenient width.

Adhere strictly to the gauges of wire specified for the transformer. It is quite feasible to use 32's s.w.g. for the chokes, for current under 100 ma. The D.C. resistance of each choke would then be 340 ohms. Three pounds of wire required for the pair. 12, connect to filament, test voltage and add turns until correct. In order to effect this, the core must not be tight against the outside of windings, and it will then be possible after adjustment to thread through a length of adhesive tape overlapping a sufficient number of turns to cover the winding.

The spool ends are 3¼in. square, and the positions of leads is shown in a diagram.

The writer will describe the push-pull a.c. amplifier that works highly successfully with the power pack, either in the "Radio Record" or in next year's "Listener's Guide."

Trouble Finding

When the Set Goes Dead

OF the possible radio troubles which may stop reception entirely, only a few occur with any degree of frequency. Therefore, when the set goes dead, it is well to check first the points where trouble is most likely to be found.

For example, since a burned-out valve is perhaps the most common trouble with all electric sets, look first to make sure that all valves are working. If they glow about normal, that does not necessarily prove that they are operating with full efficiency. The manner in which the receiver stopped will give some clue on this point. If the signals gradually faded away over the course of several days, one of the valves probably has become exhausted. The filament is lighting in the usual manner without producing the normal flow of electrons. In that case the best thing to do is to take all the valves to the nearest radio dealer and have them tested.

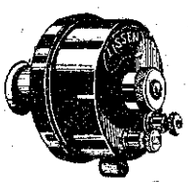
The fact that the signal faded out gradually also indicates that the trouble is not due to a broken wire, because such a break would cause the set to go out of commission suddenly.

After the valves have been checked and it is known that they are good, the next test is to tap gently all of the valves in the receiver with a finger nail. When the detector valve is struck there should be a clear ringing sound from the loudspeaker. If not, something is wrong in the audio amplifier end of the set, between the detector valve and the loudspeaker.

If the audio amplifier circuits are in good shape, the next step, assuming that the receiver is in a locality where there are one or more powerful local stations, is to remove the radio-frequency amplifier valve next to the detector valve, and also disconnect the antenna wire. Carefully place the antenna lead-in in the plate prong hole in the empty socket. Be sure that the antenna lead does not touch any metal in the set. With this connection the circuit becomes a plain detector circuit followed by the audio amplifier, and if signals are received under such conditions it indicates that the trouble is somewhere in the radio-frequency amplifier circuit. By replacing the valve and trying the test on the next valve in line toward the antenna end of the set, you can test the radio-frequency stages one by one and find where the trouble actually is.

Wiring without Solder

MANY constructors nowadays avoid soldering wherever possible, and use in preference screw-down terminals for making their wiring connections in the receiving set. There is no doubt that if the surfaces of terminals, and of leads, are clean, and if the nuts are screwed really hard down, very satisfactory connections can be made in this way. The chief difficulty in using milled nuts is that it is not easy to screw them down sufficiently hard to establish a firm connection which will not loosen. For this reason it is best when building a set to remove all the milled nuts from the terminals of the components to be used, and substitute ordinary hexagon nuts for them. With the aid of a box spanner these can be screwed hard down on the leads, thus making a firm and permanent connection. Where, however, the set is likely to be subjected to much jarring or shaking, it is as well to take the extra precaution of securing each by means of a lock nut turned hard down upon it.



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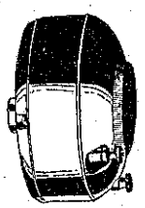

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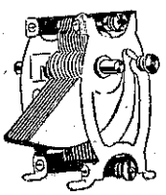

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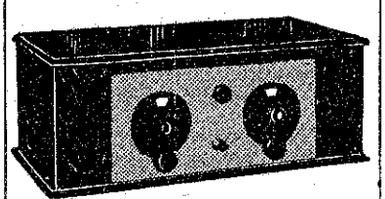

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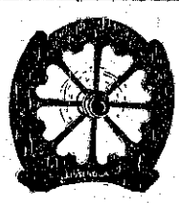

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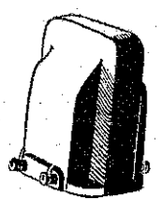

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The Regional Scheme

Recent Inauguration

WHAT is claimed ot be the most economic and satisfactory system of national broadcasting has recently been inaugurated in England. It is what is known as the Regional Scheme and is aimed to cover the whole country with a choice of at least two widely different types of programmes, sent out so as to be easily receivable on the simplest apparatus.

The English system in the past has consisted of a series of "main" stations, located in the centre of the populous areas they serve, and being augmented by a number of very low-power "relay" stations, with two high-power transmitters to fill in the "blank" spots. All told England has had twenty-one stations in operation, but nineteen of these, of course, have had a purely local service area.

The new method involves the use of only six or seven transmitters, all operating on very high power—generally 30 kw.—and all located well outside the populous part of their service areas. The London station, for example, was put into commission recently, located at Brookman's Park, in a very sparsely-populated district fifteen miles from the metropolis. It is, of course, connected by land-line to the existing studios at Savoy Hill, London, an arrangement which will be carried out with all the other stations. Each of these new stations is designed to give two individual programmes, simultaneously transmitted on two different wavelengths separated by something in the neighbourhood of 3000 k.c. Naturally the London station was the first in the new system to be erected, although work on the erection of some of the others is in hand, while practically all the sites have been decided on, after protracted experiments with portable apparatus in many different areas.

The new station is designed to serve a large area in the south-east of England, extending to the South and East Coasts and also up towards the Midland counties. The first broadcasts at present being given are mainly of an experimental order, since the existing London transmitter is still used for the larger part of every day's programme.

IF you are going to drill a hole through a window-frame for a lead-in tube, remember that if the tube is arranged to slant sharply upwards when entering the house moisture will tend to drip off the aerial outside and will not run across the lead-in tube and so impair its insulation.

RADIO LISTENERS' GUIDE.

1929-30 Edition of the Guide has been well received and repeat orders are coming in rapidly.

The "Guide" is of more than passing interest—it is AN AUTHENTIC REFERENCE WORK that can be called upon to answer all those questions that trouble the amateur wireless enthusiast.

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Power by Radio

An Invention of the Future

THE dream of distributing electric power by radio is almost as persistent a will-o'-the-wisp as that of perpetual motion. It has, perhaps, somewhat more chance of fulfilment, for no fatal obstacle of physical theory stands in its way, as the principle of the conservation of energy stands in the way of producing power for nothing. Yet the incidental difficulties of radio power transmission seem almost insuperable.

Prominent amongst present-day scientists who are interested in the possibilities of radio power is Dr. Jacques Risler, a Parisian physicist already known for researches in the use of ultra-violet rays and other invisible radiations. In the use of radio waves of extremely high frequency and low losses in the atmosphere, Dr. Risler sees at least a possibility of useful power transmission.

The difficulty with radio power, as was perceived more than two years ago by Dr. Phillips Thomas, the foremost American experimenter in this field, is not so much the loss of power suffered when radio waves pass through the atmosphere as it is the invincible tendency of these waves to spread outward and waste their energy, as ripples spread on the surface of a quiet pond. Were it possible to condense radio energy into a definite beam, as can be done with the light rays of a searchlight, greater possibilities would be apparent. To some extent, as Dr. Thomas proved, this beamlike condensation can be managed, but not sufficiently thus far to threaten the present systems of distributing power through wires.

With rare exceptions, energy has an incurable habit of spreading itself as thin as possible, like water spilled on the floor or like a handful of gas atoms let loose in a vacuum. Most of man's accomplishments in handling energy, like those, for example, which are responsible for electrical engineering, have consisted in some device to keep the energy in one place until it is used. The energy of steam is kept inside the boiler by the steel shell. The energy of electricity is kept inside the wires by a covering of insulating material. Dr. Risler's difficulty is that there is nothing to keep radio energy inside the path assigned to it.

Useful Hints

IF you are going to listen in several rooms at once, keep the set itself in the room to which the aerial comes, as it is easier to extend loudspeaker leads than to carry the aerial itself through the set.

AVOID the same earth connections as is used by a neighbour because, although in some cases this practice is O.K., it is often one of the causes of interaction between sets.

THE effective height of an aerial is not its height from the earth, but its height from the nearest large earthed object, so trees, iron roofs, etc., underneath it reduce the effective height considerably.

The Past Year in Review

Suggested Improvements

THE past year has witnessed many changes connected with radio broadcasting, both in New Zealand and Australia; chief of which was the opening of the new 4YA at Dunedin. The most important event outside New Zealand was the inauguration of the New Broadcasting Company in Australia. The future looks bright for radio, especially during the next winter, as owners of efficient receivers will receive ample entertainment from Australian stations, to say nothing about New Zealand stations. Again, with short-wave work, there will be plenty of stations to tune-in almost any hour of the day and night. Regarding New Zealand stations; whilst there has been improvement in programmes, there is still plenty of room for further improvement; and doubtless with the increased revenue from licenses, the Radio Broadcasting Company will see fit to offer bigger fees to artists, thereby attracting better performers to the "mike." The relay from Otaki during the festive season did not disgrace the company. The courtesy of the staff at 2YA deserves special mention; and the efforts of the announcer, Mr. Clive Drummond, at 2YA, merit the thanks of all listeners, his duties having been carried out efficiently throughout the year. The children's sessions have created considerable good-will with the youngsters, and like many other parents. I have sat with my children and listened to several sessions. I can assure the Aunts and Uncles that their work at the "mike" is delightful to both children and parents, and, as predicted by me some years ago, has proved the foundation stone of radio.

There have been times when one's teeth were on edge when listening to various artists from the YA stations; and I sincerely hope fewer amateurs and more accomplished artists are "billed" to appear during the year 1930. The "Radio Record" is almost indispensable to the city listener, and is, in point of fact, wholly indispensable to country listeners, a wealth of information being made available to listeners: the "Mail Bag" section and also the short-wave notes by Mr. Selgus, being two important features of the "Radio Record." The notes, "Radio Round the World," also notes by "Switch," are excellent. I regret to have to complain again about the "mikes," but it strikes me very forcibly that several of the "microphones" at 2YA should be either scrapped or handed over to the makers for investigation. The work of the "Hams" in New Zealand has been very fine indeed, and considerable pleasure has been derived from this particular section of the transmitters. The "Hams" have spent a large sum in advancing radio, and also given many hours of time towards what is fast becoming more than a hobby with them, without monetary reward. Cheerio to Radioland.—R. Leslie Jones (Wellington).

WANTED AND FOR SALE
For column of casual advertisements see page 32.

Zeesen Short Wave Transmitter

WEEKLY reports of reception of Zeesen station appear in these columns, so the following technical description (from "World Radio") will be of interest.

Designed for the purpose of world-wide broadcasting, the new short-wave transmitter at Zeesen has recently completed a series of experimental transmissions extending over several weeks, and is now operating on a regular schedule, relaying the Konigswusterhausen programmes from seven o'clock (G.M.T.) each evening. The apparatus of the new station is actually accommodated in the same building as the Kinigswusterhausen long-wave transmitter, and the aerial employed, a single wire approximately 55 metres in length, is attached to one of the existing masts which support the larger aerial.

Like the apparatus of the long-wave station, the new transmitter was constructed by the Telefuken Company, and is very similar in general design to the powerful short-wave stations recently built at Nauen and Buenos Aires, by means of which telegraph, telephone, and picture transmission services are maintained between Germany and the Argentine. The power rating of the new station—i.e., the power in the aerial when the transmitter is operating, but no modulation applied to the carrier wave—is 8 kilowatts, and the normal wavelength is 31.38 metres.

Arrangement of Apparatus.

THE transmitter comprises seven stages, the crystal control of oscillation frequency being applied to the first stage. The desired short-wave is obtained by selecting a harmonic of the crystal frequency—which, for practical reasons affecting the reliability and life of the crystal, is lower than that corresponding to a wavelength of 31.38 metres—and amplifying and filtering the selected harmonic frequency in succeeding stages until the desired wavelength as well as the required power are eventually reached. Naturally, the valves used are of increasing power-handling capacity in progressive stages, from the ordinary type of power amplifying valve in the first stage to two 1,500-watt power valves in parallel in the fifth and sixth stages, at which latter point modulation is applied via three power valves operated in parallel. The seventh, and final, stage consists of two 20-kilowatt water-cooled valves connected for "push-pull" amplification.

Power Supply.

THE various types of valves employed necessitate different supply voltages. Power is obtained, initially, from the main station transformer, which is fed from outside power mains. The two water-cooled valves in the last stage are fed with anode current at 10,000 volts, generated by a high-tension, direct-current dynamo of 50-kilowatt capacity. Anode current for the valves in the fifth and sixth stages is supplied by a 4000-volt, 5 kilowatt machine, while the remaining stages, with the exception of the crystal-controlled oscillator, which has its own 220-volt, direct-current generator, are supplied from yet another direct-current dynamo at 2000 volts, the power rating of this machine being 2 kilowatts.

For filament heating there are provided two separate dynamos: one giving up to 5 kilowatts at 40 volts, and the other giving 2 kilowatts at 20 volts. In addition a special machine is provided for the filament heating of the modulator valve. Grid bias for the two large output valves (seventh stage) is obtained from a special 750-volt, 2-kilowatt converter.

Control arrangements throughout the station are of the most modern type; all the generators mentioned are started by means of push-buttons on a central switchboard which is situated in the basement of the station building.

Radio Reception

A New System

A GROUP of business men and scientists in New York recently witnessed a demonstration by Dr. Alger S. Riggs of a system of radio reception which he claims is entirely new. Dr. Riggs declares that special valves he has developed, when used in his special circuits, give even better than normal radio reception without making use of many features hitherto thought indispensable.

All the valves in the radio-frequency and audio amplifier stages of the circuit, he says, work with a positive bias. There is no grid leak nor grid condenser, and the radio-frequency stages are aperiodic—they work without the aid of tuning coils and tuning condensers. Condensers and tuning coils are used in the set, however, in a pre-selector circuit through which the incoming broadcast signals must pass before they reach the radio-frequency amplifier stages of the receiver.

Another important improvement claimed by Dr. Riggs is a true "threshold" detector arrangement, which, he says, makes it possible to exclude completely static or other electrical interference, provided the signal strength is sufficiently great as compared with the undesirable noise.

Choosing a Radio Set

Essential Qualities

WITH the rapidly-increasing number of commercial sets on the radio market, it is a distinct advantage, especially to the layman, to have a few points as a guide in comparing different sets and thus finally choosing one that will give the desired service. The following six qualities, if found to be reasonably in evidence in a receiver, will ensure ultimate satisfaction:—

(a.) Selectivity—the ability of a set to receive signals from a broadcast station of a certain wavelength or frequency to the exclusion of other stations broadcasting on practically the same wavelength or frequency. (b.) Quality—the fidelity or naturalness of musical reproduction obtained by a receiving set, based on comparing the likeness of reproduction with the music originally rendered by instruments and artists at the broadcast station. (c.) Volume—the loudness of reproduction obtainable without sacrifice of quality. (d.) Sensitivity—the ability to receive and reproduce signals from distant broadcast stations. (e.) Appearance—the outward design and finish of the receiver and its fitness to lend itself harmoniously to the surroundings in which it will be used. (f.) Simplicity of Control—the ease with which different broadcast stations may be tuned in as determined by the number of controls which must be manipulated in actual operation.

Radio Construction

Successful Models

WE continually receive comments from listeners concerning the models that have been described in the "Record" and made up by them. There are many who encounter difficulties which we can usually trace to some little fault committed by themselves.

Probably the most outstanding successes we have had have been the "B and C" eliminator described in the "Radio Listeners' Guide," "Pentode's" Dynamic Cone Speaker, the Linen Diaphragm Speaker, "Round-the-World" Two, and the Browning-Drake receivers. Following are the results of two constructors who have communicated with us recently.

"I have successfully constructed a "B" eliminator to the specifications given in the "Radio Listeners' Guide." I have varied slightly from the instructions as regards transformer and chokes. The result is that the voltage is slightly higher. I consider the task of building a very simple one and not above the capabilities of the average journeyman. Providing a little patience is used in winding the transformer, which I consider the hardest part of the task, the rest is easily built. It is not costly, for I constructed my whole outfit for less than £5. I have used a wire-wound resistance with slides for the tappings; in my case these are 16 volts, 90 volts, and 185 volts. The bar has been mounted on a piece of bakelite panel and the slides arranged in position and connected up. I had the eliminator working within an hour after having received the resistance bar, which goes to show the simplicity of this type of control unit. The cost is approximately 15/- complete. The voltage can be varied to ½-volt if necessary.

I advise any listener who desires a power pack and has a few spare evenings not, to be afraid of undertaking the construction of this one. All necessary data is given in the "Listeners' Guide." It is all very simple and easy to follow. This is especially so when using the Ratheon valve. The commercially-made power packs are excellent, but their cost, in my opinion, is rather prohibitive to the man who has the patience to build his own. To get good results one needs an output of 180 volts and 60 milliamps., and this can be delivered by this outfit in question."—S. Ellis (Nelson).

This has evidently been a very successful description, for we know of several other satisfied constructors. We have seen one very fine eliminator, the workmanship of Mr. H. R. Simmonds, of Khandallah. The instructions in this case were followed to the letter, with the exception of the arrangement of the components in the tin case. The condensers were not put underneath, but arranged so that they could be reached with ease. Grid bias has been provided by means of a wire-wound resistance of 2,000 ohms, which gives the requisite 40 volts for a 171 or smaller voltage for other types of power valves. A.C. filament voltage has been provided and lights the power valve, and there is no hum. This constructor has also built "Pentode's" dynamic cone speaker, and as we have heard this working, and have compared it with our standard model, we must compliment him on the very fine job he has made of it.

Realising the popularity of this speaker, we shall describe it again in a future issue, embodying the improvements used by Mr. Simmonds. In the meantime, we should like to hear from other constructors who have had difficulty or success, so that these cases may be dealt with in the re-description.

One of the most successful receivers we have published has been the short-wave "Round-the-World" Two This fine little receiver has been built by a very large number of constructors, and to the credit of all concerned, we have received communication from only one correspondent who encountered difficulty, and this was through not following the specifications on a vital point.

Short-Wave

(Continued from page 32.)

about 9.30 a.m. The interference referred to on the Californian was also troublesome on this stranger at night, but was absent on the following morning, but signals were weaker then.

The 20.5 metre Trans-Atlantic Telephony Station was heard several times, but like the other trans-Atlantic stations on 32-33 metres, the carrier is on for hours at a time without a word being spoken.

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Canadian Short Wave.

THE short wave station CJRX has been transferred from the Grain Exchange Building, Winnipeg, to a new building about twelve miles outside the city, and is again on the air on 25.5 metres, the power being 2 kilowatts. The owners of the station, Messrs. James Richardson and Company, Grain Exchange Buildings, Winnipeg, Minitoba, ask amateurs in any part of the world who may receive their transmissions to let them have a report as to reception obtained.

Dutch Apparatus for Siam.

AN ORDER has been placed by the Siamese Government for a twin wave-length broadcasting plant at Bangkok, which will transmit on 300 and 30 metres simultaneously.

Intermediate Waves from France.

GRAMOPHONE transmission on 175 metres are given on Wednesdays and Saturdays between 9.30 a.m. and 10.30 a.m. (N.Z. summer time) from a small experimental station at St. Quentin. The call sign is F8GM.

New Empire Broadcasting Scheme.

THE following from a recent issue of the "Wireless World" will be of particular interest to New Zealand short-wave listeners:—

"In the editorial of Wednesday last, the 'Wireless World' criticised the B.B.C's. policy in regard to Empire broadcasting, and urged the new chief engineer and his staff to show the same degree of enthusiasm for achieving an Empire short-wave service as on other wave-bands, has already won for British broadcasting a reputation second to none."

Subsequently a note appeared in the daily Press suggesting the strong possibility that the present Empire experimental short-wave broadcasting service from G5SW, Chelmsford, will shortly be superseded by regular Empire transmissions from a new B.B.C. short-wave station. A statement was made to "The Wireless World" by the B.B.C. at the time of going to press to the effect that the corporation is considering the future of short-wave broadcasting from this country and is already negotiating on the question, but that no decision has been taken to build a station at Daventry or elsewhere."

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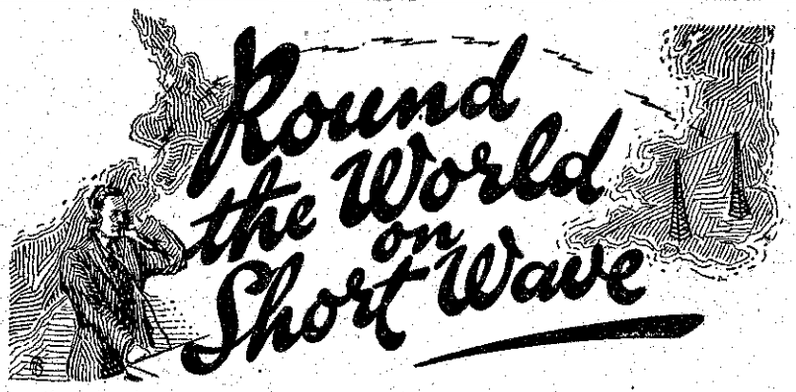

THIS page is conducted in the interests of shortwave enthusiasts. A weekly log comprising notes of reception and interesting topical events is contributed by Mr. F. W. Sellens, Northland, Wellington, but all listeners are invited to send in paragraphs of general interest.

LGN, Bergen, Norway.

MR. M. WIFFEN (Blenheim) reports hearing a station at 6.15 a.m. to 6.30 a.m. on January 2 on about 31.3 metres transmitting items by a choir and thinks he heard the call sign LGN. As this station is listed as working on 31.25 metres, it appears fairly certain that it is the one Mr. Wiffen heard. The same correspondent also reports weak foreign station the same morning on about 42 and 46 metres. Has any other reader heard LGN? The writer was still in bed at this time.

Berlin calls Bangkok.

MR. W. R. SMYTHE (Greymouth) has heard a German station, below 15 metres, working Bangkok from 10 p.m. till 11.30 p.m. The German station (which I expect is DGW, Nauen, on 14.83 metres) comes in very clear and loud.

Reception During Week Ending January 4, 1930.

RECEPTION has been about the same during the past week with but little variety in the nature of new stations.

RA97, Siberia, 70 metres, continues to come in well with the usual amount of static.

W9XF, Chicago, 49,83 metres.—This "International Relay Transmitter," as they call themselves, has come in well after about 6.30 p.m. each evening. They are audible before this time, but too weak to bother with as a rule.

W3XAL, Boundbrook, New Jersey, 49.7 metres.—Thursday was the only day I heard this station. They stated then that they were transmitting daily except Sunday and Monday (Monday and Tuesday here). Volume and quality were quite good, being R8 at 6 p.m. when they signed off, it being 1 a.m. Eastern Standard Time.

W2XAF, Schenectady, 31.4 metres, was fair strength on Sunday, but with a "gurgle."

PCJ, Eindhoven, Holland, 31.4 metres.—On Friday PCJ was R8-9 when they commenced at 6 a.m., but decreased to R3 by 7.30 a.m. Reception on Saturday morning was similar, except that it was slightly weaker all through. During the afternoon session they did not reach readable strength.

Zeesen, Germany, 31.38. metres.—More has been heard of this German during the week. He starts at about 6 a.m., average volume about R7. On Thursday I was up late, and found they were not audible at 6.50 a.m., but at 7.30 a.m. dialogue and music was well received at R.8. This was only temporary, as by 8 a.m. they were mushy at R3.

7LO, Nairobi, East Africa, 31 metres, has been heard each morning at about R3, except Monday, when they were R4 at 6 a.m., increasing to R5 at 6.30 a.m., when "This is 7LO, Nairobi, calling," was distinctly heard. It is a rare thing to hear more than odd words from Nairobi on account of static and Morse.

VK2ME, Sydney, 28.5 metres.—On Thursday evening a strong carrier was on for a long time, but did not hear any talk.

KZRM, Manila, 26 metres (about).—This is still the best short-wave station transmitting music. The Java-Holland stations are excellent as a rule, but are nearly always on duplex. KZRM is not much before 10 p.m., but after this they come in at R8-9, always "transmitting simultaneously from Manila and Cebu." Regarding this last place, there has been some mystery. It always sounded like Kaboo; correspondents as well as myself have searched maps, etc., but could not find such a place. If it is Cebu, and if one listens carefully, I think that is the name. It is the capital of the island of Cebu, one of the Philippine Islands, with a population of 46,000.

G5SW, Chelmsford, England, 25.53 metres.—I tried 5SW on Wednesday at 12.30 a.m., and found volume quite good, being R8, but very gushy. Big Ben was heard striking the half-hour (12.30 midday in London). This was followed by an organ recital. Strength is better now at 7 a.m., when they open up, but rapid fading as a rule spoils reception.

ON Thursday morning, at 7 a.m., they were the best for a long time. Before going over to London, something was said about an international concert on Friday, at 8 p.m. Big Ben was R7-8, followed by a talk about the Italian works of art which are now on exhibition at Burlington House, London.

THIS talk, which was from 75 to 100 per cent. readable, was very interesting and continued till 7.25 a.m. A talk by the Rev. — Hutcheson followed. Readability was not so good, as a morse station came in almost on top of 5SW.

KDKA, Pittsburgh, 25.4 metres has varied a lot. On Sunday they did not reach readable volume, while on Thursday they were only R8-4 and gushy at 4.30 p.m., but perfect at R7-8 by 4.30 p.m. till signing off 5 p.m. with "Best wishes for the New Year." Saturday was not so good, again being R5 at 5 p.m. when concluding their "Slumber Music" and signing off.

W6XN, Oakland, California, 23.35 metres was very good on Sunday, R2 at 2 p.m., increasing to R8-9 by 6 p.m., and then slowly decreasing in volume.

W2XAD, Schenectady, 19.5 metres, is still almost impossible during the afternoon. On Friday morning they were tuned in at 6.25 a.m. at R7-8, when it was announced that the orchestral music was from the main dining room of the Hotel Pennsylvania, New York.

The Java stations, PLG, PLF, PLE and PMB, and the Dutch station HCK were heard on duplex telephony on several evenings during the week.

DGW, Nauen, 14.83 metres, is often on the air for a long time without anything being said. On Thursday, at 10.20 p.m., they were calling repeatedly: "Hullo Bangkok, here is Berlin."

Unidentified Stations.

A Californian amateur on about 83 metres was heard on Saturday evening, signing off just after 8 p.m. Readability was spoilt by some interference, a high wind was causing an outside electric lamp to swing and crackle. **35.3 metres (about).** A weak foreign voice was heard at 6.15 a.m. on Saturday. **24.3 metres (about).** An interesting talk was heard on this wavelength on Saturday from 11.30 p.m. It was duplex telephony, the voice from the station tuned in was R6, while the other person could be faintly heard at times through the same station. (I could not locate the other station, unless it was one of the Java or Dutch stations which were on at that time).

Some of the talk was in English with a foreign accent. They were still going at 12.30 a.m., but could not be certain of the call. He said at times: "Alloa! Alloa; here is —?" Sounded like 6HI or 6XI, but am not certain. They were also on for a time on Sunday morning (January 5), going off

(Concluded on page 31.)

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