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SERVICE AND ECONOMY COMFORT AND EFFICIENCY

HOME JOURNAL

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Radio Round the World

THE present financial unrest has led to so many telephone calls between England and the United States that the American Telephone and Telegraph Company recently had to obtain leave from the Federal Radio Commission to use its South African telephone wavelength for the European service for a period of ten days.

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LEADING Continental radio and electrical authorities were assembled recently at Paris for the National Anti-static Congress, when all forms of interference with radio reception were analysed and discussed. One of the most practical suggestions was that electrical apparatus should bear a mark indicating that it had been tested and approved as a non-radiator of electrical waves.

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AN anti-loudspeaker "war" in France has brought about a reactionary movement in favour of loudness. "Don't complain of noise," writes a pro-loudspeaker correspondent, in a French contemporary, "a city without noise would be dead, differing in no way from a cemetery. We are all living, so long live noise!" This is hardly complimentary to the loudspeaker, but the writer means well.

* * *

WIRELESS experts, working in co-operation with the Imperial Airways, are now organising a wireless network on the all-red route from England to the Cape. The undertaking is in the hands of Flight-Lieutenant R. F. Durrant, A.F.C., who was the wireless operator on the airship R34 when she accomplished her first flight west across the Atlantic and the first double crossing in July, 1919.

THE British Postmaster-General, in replying recently to a question in the House of Commons concerning the substitution of quarterly for annual licenses, stated that there were now 3,750,000 wireless licenses in force, and that the cost of collecting the fees and securing the renewals was already considerable. The proposed substitution would practically quadruple the work, and the additional expense would, he thought be out of proportion to the benefit derived by the public.

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IN the marine arsenal at Toulon trumpet calls are recorded on discs and transmitted through a power loudspeaker to all ships in the roadstead, thereby reducing the required number of ships' trumpeters. It has been suggested that this economy scheme should be carried still farther and records kept of ceremonial gunfire, which could be transmitted through superloudspeakers when required for formal salutes.

MR. K. E. YLANDER, of Ostersund, Sweden, claims to have invented a device which completely eliminates fading. The apparatus, which he describes as a "fading compensator," is of simple construction and can be attached to any receiver.

THE moulding of women's "colour consciousness" is one of the future roles of television, according to Mr. Edward H. Symonds, president of the British Fashions and Fabrics Bureau. With the fertility of imagination which comes more naturally to the prophet than to the technician, Mr. Symonds told the Halifax Textile Society recently that "the perfection of colour photography, which was well on its way, will be brought within the scope of television. This particular feature of this new invention will increase the fashion educational power of television because by reproduction of exact colours of the materials employed and the styles, season by season, women's colour consciousness will be regulated and moulded." Meanwhile we are told that a new cinema at Waterloo, Huddersfield, has been provided with accommodation for housing television apparatus in readiness for the possible arrival of this refinement.

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PROFESSOR MOLTHANOV, of the Soviet Arctic Institute, has designed a radio transmitter which will automatically broadcast meteorological data when cast adrift on a buoy. The first test is to be made shortly in the Behring Straits.

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A NEW German high-power station situated in the neighbourhood of Pegau, to the south of Leipzig, and destined to serve that city, will be formally opened in March, 1932. Its ultimate energy will be 150 kilowatts, thus making it the most powerful transmitter of the German broadcasting system.

A NEW means of communication, utilising a narrow beam of neon light as a carrier, was demonstrated recently in New York. The experiment was conducted between the main central Pennsylvania Pier and a liner in dock. The programme consisted of speech, gramophone records and radio broadcasts from nearby stations, and was received and made audible through an ordinary loudspeaker. Only a small red light on the pier, more than half a mile away, was visible from the ship. This was from the powerful neon tube, which changed the electrical impulses of the microphone into light waves. This light, centred in a 30in. mirror, similar to those used in searchlights, was then projected in a beam which was picked up by a similar mirror in the ship. In the centre of the receiving mirror was a photo-electric tube. The flickers of the projected neon light as they reached the mirror were concentrated on the photo-electric tube and changed by it from light waves to electric impulses, which were fed to the amplifiers and then to the speaker.

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A LITTLE simple instruction in the working of Ohm's Law, taken from the Bombay "Radio Bulletin":—

"To find out watt, multiply together with the number of volts and number of amperes. For example, 100 volts × ½ ampere = 50 watts." Is it not very simple? I am sure you must have already said, 'Yes, it is so very simple. I thank you for that.' Yes, thanks! Finally, we take Ohm's Law: 4 volts divided by 2 amps., the result is 2 ohms."

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FIGURES are now available in connection with the British Radio Exhibition, held recently at Olympia, and show that the number of wireless sets ordered is approximately 1,000,000, the value being roughly £10,000,000. Compared with last year the figures show a decided increase. Last year there were 650,000 sets sold, at a value of £7,000,000. Apart from sets, orders for 8,000,000 valves were placed at the Exhibition, representing a value of £3,500,000, as compared with 5,300,000 last year, worth £2,600,000. Batteries also sold better this year. Orders were taken for 10,000,000, representing a value of about £4,000,000.

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A RATHER mysterious attitude toward the broadcasting of religious services has been taken up by the Roman Catholic authorities in Northern Ireland. Application was recently made by the B.B.C. for broadcast facilities, and it was turned down without explanation. Consequently Belfast is broadcasting regularly from a number of Protestant churches, but no Roman Catholic services are relayed. In the Irish Free State no services of any kind are broadcast.

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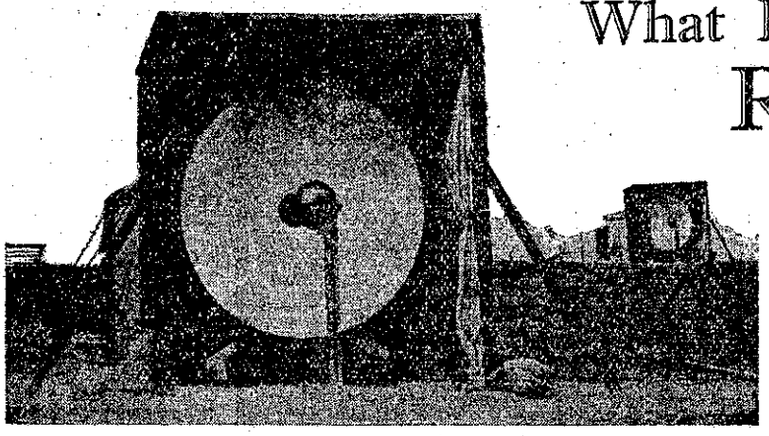
THE race between Britain and Germany for the four millionth broadcast receiving license has ended in a victory for Britain. Thanks partly to the Post Office "ghost van" campaign, the British figures went up with a rush toward the end of October, and the four million mark was reached with Germany nearly 200,000 behind. And now for the ten millionth, which the more optimistic statisticians regard as the saturation point for the British Isles. The German saturation point, on the basis of four heads per license, should be in the region of 15,000,000.



The Microray may revolutionise radio communication, but . . . .

What Has 1931 Meant to Radio Development?

A Critical Analysis of the Year's Achievements

by "Observer"

DEVELOPMENTS in radio cannot be portioned into years; they take place in stages, usually separated by long periods and clearly defined so that it is very difficult sometimes to say what has happened in one calendar year.

Up to the present we may divide radio into several clearly defined stages. First, the experimental stage. This was followed by elementary broadcasting which stage the valve ushered in. The gradual improvement of the valve, not only as a receiver but as a transmitter, was responsible for bringing people to realise that radio provided an unequal means of entertainment. Yet radio was not universally popular. It wanted some major improvement in order that it should be enjoyed by all. It was too complicated and too uncertain.

Came the electric set, and this provided means to make broadcasting popular. Almost overnight it grew from an expensive hobby to a serious competitor of all forms of entertainment. Radio has now passed that stage and is looked upon as an everyday affair, simple, efficient and almost indispensable. What our next stage will be it is not very hard to forsee—it will be television. It did not come last year, and it is doubtful if it will come this year, but when it does radio will undergo a sweeping change and more than ever it will become an essential of every home.

Last year, then, is just one of the years which are tucked away in the period which marks the entry of radio into the home. As in the year preceding our radio sets were simplified and slightly improved. Not much improvement can take place in a modern set—it is simple and efficient.

Of course there have been certain changes during the year. As we predicted last year the set has generally become very much smaller, and now probably nine-tenths of the sets are the mantel or compact type, better known as midgets. When the first midgets came they aimed at bringing radio down to a price and incidentally to a size. This they did with remarkable success with the results that the midgets acquired a very bad name. But it was the type of set which appealed. Small, neat and portable, it offered many advantages over the larger and more or less cumbersome piece of furniture which stood back in one corner. After the first midget rush ended, engineers turned toward the problem of compact radio seriously. The result has been that this year has seen many splendid models come out. The most reliable manufacturers in the world have turned their attention toward them and turned out machines that have brought credit to their name. In the older sets there was undoubtedly a great deal of waste space. It was thought at first that space was needed to separate the components so that better results could be obtained, but even allowing for components to be spread out there was a great deal of space wasted. Now this has been eliminated.

As we would expect, the idea of minimising space has been overdone. There are sets that are undoubtedly jammed into far too small a space and, what is more, many of them are far too light. There is a point beyond which, at the present time, it is impossible to go. There is a difference between economising and skimping and many of these smaller machines have unquestionably been skimped with detrimental effects. Many, too, have been made to a price and they have caused dissatisfaction with radio generally.

IN order to economise on the modern set it is essential that the number of components be reduced, but instead the super-heterodyne circuit, which required more valves than the ordinary t.r.f. circuit, was developed. It was because of the development of this circuit that American engineers turned their attention toward the pentode, a valve which had been developed in Continental laboratories some five years earlier and since used in many Continental and English sets. This valve, which has a remarkable amplification, does away with a complete stage—a valve and coupling device, which may possibly be a bulky transformer. The development of the pentode has saved radio a great deal of space. In order to make the set capable of giving more volume and yet maintaining quality, American engineers developed the multi-mu valve—really a combination of two types, the power valve and the high amplification screen-grid valve.

The perfection of these two valves forecasts rather an interesting development, that is the combination of several valves in one piece of apparatus. In order to amplify, certain coupling devices must be employed and, in the earlier days, three in one valves were developed with these coupling devices within the glass. It is likely that although the actual system used will not be further developed, the idea of combining the function of several valves into one will be pursued. Like everything else they are becoming very complicated in

(*Continued on page 2.*)

Only a phase in radio development—apparatus used for reception of the early broadcast.

Radio in 1931

(Continued from page 1.)

structure and in function. Possibly they will become dearer but they will be fewer and will last longer. A valve with a replaceable filament has already appeared, but it seems not to have been commercialised—probably for obvious reasons.

A short time ago we heard a great deal about the Stenode Radiostat—a superheterodyne type of circuit which used a quartz crystal as a stabiliser. This type of set gave a separation of stations hitherto believed impossible. The year 1931 saw it evolve from the laboratory and become a commercial product. Kit sets are now being sold in the United States and quite a number of the sets appear to be in operation. One of the chief present objections is its costliness but, as in other developments, this is only a prelude, and it is not unlikely that we shall see the Stenode circuit embodied in the commercial receiver of the future.

Concerning the superheterodyne circuit which seems to have captured the imagination of both the American and New Zealand public, serious criticism can be directed. Undoubtedly the circuit is sensitive and more selective than the normal, but being more sensitive it amplifies noise to a far greater degree than is sometimes pleasant. Furthermore, it has the unhappy knack of picking much of the parasitic noise from the power lines and giving this to us through our loudspeakers. This has made many enemies for radio and incidentally for the electric set. Already some of the newer models have reverted to the older circuit with slight modifications.

The Progress of Television.

WHILE it cannot be said that television has made marvellous strides, yet it has made progress, and one of the most outstanding events of the year was the announcement by the B.B.C. that transmissions will take place from their studios and actually be included in the broadcast programme. It is proposed to transmit such well-known and popular artists as Jack Payne and his celebrated B.B.C. dance orchestra. Further, the B.B.C. is investigating the possibilities of conveying the television signals by land line to their regional station at Slaithwaite. It is interesting to note that Sir John Reith, the director of the B.B.C., recently visited America and upon returning gave consideration to the Baird, a British system.

Speaking on television recently, Mr. E. T. Fisk, managing director of Amalgamated Wireless, and one of the outstanding figures in radio, made a statement that television to-day is an accomplished fact but it had limitations, those limitations being the size and vividness of the picture, which is only two or three inches square. Mr. Fisk said that he believed that the success we are aiming at is just around the corner, and that any day we may discover some new steps which will take us right to our objective. "We shall look forward to witnessing in our own homes the Melbourne Cup as it is run. Going further, we may expect to sit at home in any part of the world and witness His Majesty the King opening the British Parliament, or see the President of the United States talking in the White House on an important world subject."

And so it must be admitted that the year 1932 may possibly witness the ushering in of a new stage—a new era in the evolution of radio, and that era is television.

The Micro-ray.

OF great importance was the successful transmission of the micro-ray. The system, employing ultra short-waves of approximately 18 centimetre (7 inches), was used for the first time on March 31 to provide a high quality two-way radio telephone circuit, the power used being only half a watt—just sufficient to light a flashlamp bulb. Perfectly normal conversation was exchanged between Dover and Calais. For maintaining secrecy of communication, the micro-ray offers infinite possibilities and it has valuable application in the direction of aircraft landing during fog.

Thomas Edison.

A RESUME of the year 1931 would not be completed without recording a great loss to radio—I refer to the death of Thomas Alva Edison, America's greatest inventor. Edison, it will be remembered, was the pioneer of the electric light and literally a hundred and one inventions in the electrical world. It was Edison who developed the gramophone which has now become the close associate of radio, an electric dynamo, motion pictures and a long list of inventions which have meant much to modern civilisation. The world is much poorer by his death.

Coming . . .

"Oliver Cromwell"

The famous historical play by John Drinkwater, will be broadcast from 2YA under the direction of Victor Lloyd on January 12.

Radiophone Record

Sydney to Valparaiso

IT has oft times been stated that wireless can meet any emergency, no matter how great the difficulty or the shortness of time for carrying out a task.

A particular example of carrying out an emergency service was furnished by the radio operators of La Perouse, the famous Sydney commercial station, on a recent Sunday morning. The operator on duty was called to the telephone at 3 a.m. to take an emergency call on the Anglo-Australian telephone circuit. Rubbing the sleep from his eyes, within a few minutes he had picked up London at the La Perouse Receiving Station, and put the call through to the Post Office terminal equipment. London informed him that a call was to be put through from Valparaiso, Chile, South America, to Sydney. The call was put through to the satisfaction of all parties, thus establishing a world's record for a long-distance call.

The circuit covered was actually 17,000 miles, including 2000 miles of land-lines between Valparaiso and Buenos Aires. From the latter city the conversation was transmitted to London by wireless across the Atlantic, and on to Sydney, where the commander of the Chilian training ship spoke from No. 3 Wharf, Circular Quay.

Television Becoming Popular

Regular Broadcasts Granted by B.B.C.

GREAT interest in television has been aroused during the past few weeks by special television programmes given by the Baird process, and transmitted from the two London stations of the British Broadcasting Corporation.

The first of these transmissions was veritably a milestone in the progress of the Baird system, as it was the first television programme to be given by the B.B.C. during their normal hours for transmission. Previously the B.B.C. have only broadcast television at some time outside their schedule, and this had the effect of retarding the popularisation of television, inasmuch as enthusiasts found it very difficult to receive these broadcasts as the time was late at night.

By giving transmissions during normal hours, it seems that the B.B.C. now consider the Baird system to have reached a degree of perfection which brings it within practical and commercial limits.

For the first of these special transmissions the subject chosen was Mr. Jack Payne and his B.B.C. Dance Orchestra, which is, perhaps, the most popular dance band in the country. The transmission was excellent, many favourable reports being received from all over the British Isles.

History of 2ZW

Attractive Booklet

AN attractive booklet, dealing with the history and growth of Station 2ZW has been issued by the owning company. It is set out in the reading matter that the station has established something of a record in having been on the air for a period of 1300 hours with less than 63 minutes loss of time through breakdown. This is a tribute to the engineers responsible for the equipment—Messrs. Collier and Beadle.

An impressive list of pioneer features introduced by the station is incorporated in the booklet. This list naturally makes effective claim for all enterprise possible, and it does indeed constitute a formidable tally. Probably one of the features that will most impress readers is the social service rendered by the station. Considerable assistance was rendered in the first instance to the Mayor of Wellington's Relief Fund, and latterly Christmas cheer for the current season has been organised over a wide area by the station—in particular the Smith Family, adapted from Sydney, has proved highly popular and as an outcome, hundreds of families will derive benefit this Christmas.

Altogether, not less than £1000 has been directly secured for charity by the enterprise and aid of Station 2ZW.

Unquestionably in Mr. Stratton this station has an organiser and announcer of more than ordinary talent and the popularity claimed by the station is almost entirely due to his capacity and enterprise.

Children's Sessions

From 2YA

Monday.—Kipling Lady and Uncle Jeff to-night, and they are to be the guests of honour at an original play called "Mother Goose," written by Miss Jenkins. There will be choruses of Nursery Rhymes and recitations by the "Two Little Girls in Blue."

Tuesday.—Phyllis will entertain you all at her birthday party in the studio to-night. We are to play games and have such fun. Then we are going to play "Forfeits," and each little cousin will be told to sing, play or recite for her "Forfeit." It's Jumbo's evening, so let's hope he won't break any cups and saucers at the party.

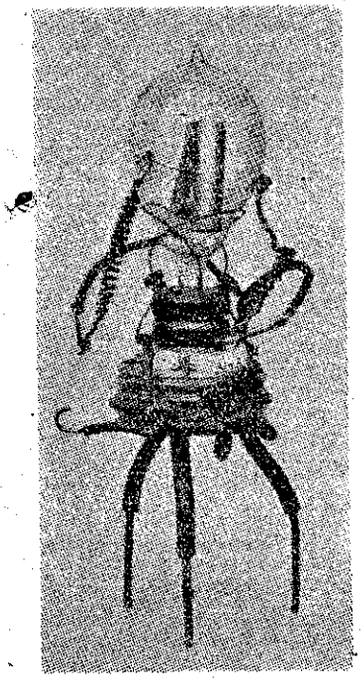
MARCONI relates HOW WIRELESS BEGAN

Senatore Marchese Marconi, probably the best known figure in radio history recently told in his own words from the B.B.C. the thrilling story of how radio began. Through the courtesy of "The Listener" we are able to reproduce in full that remarkable talk.

Marconi, as a young man, conducting experiments with one of his earliest types of transmitter, developed after he had made his great discovery of the earthed aerial system of transmission. In the picture the metal sheet is the aerial, while in front of the young inventor is an induction coil to generate spark discharges.

THE seed from which it can be truly said that wireless has sprung was the discovery made by Michael Faraday, one hundred years ago, that it was not necessary for two electrical circuits to be in actual physical contact in order that electric energy might pass across a small space between them. This great discovery was followed by the masterly Electro-magnetic Theory of Clerk Maxwell, published in 1865, in which he clearly visualised the existence of electric waves in space, of which experimental proof was given by Heinrich Hertz in 1888.

In 1895, I began my own researches with the express intention of utilising electric waves for telegraphing across considerable distances, and succeeded at that early date in transmitting and receiving intelligible telegraphic signals across space over distances of about one and three-quarter miles. These first tests were soon followed by important improvements which made possible tuning and selectivity and by new discoveries, such as that of the enormous distance over which these waves can travel and be detected notwithstanding the intervening curvature of the earth, which discovery enabled scientific investigators subsequently to learn something new in regard to the constitution and condition of our atmosphere at great heights, thus opening up vast and fertile fields of useful research which have lately allowed us to scrutinise still more effectively some of the mysteries wrapt up in the space which surrounds our earth.



One of the earliest Fleming valves.

The beginnings of telephony as we now know it, whether operated by line or radio waves, naturally date from the invention of the electro-magnetic telephone receiver and the carbon microphone. This takes us back to the days before Hertz, actually to the time of Maxwell, for it was in 1861 that Philip Reis, of Friederichsdorf, using a primitive form of electro-magnet and an imperfect electrical contact, obtained by means of instruments connected together by wires the first experimental results that deserve recording.

Antonio Meucci in 1871, and Elisha Gray in 1874, among others, took out patents for apparatus which was certainly able to transmit speech, though not very perfectly; but it was reserved for Dr. Graham Bell in 1876, to evolve the first practical form of telephone. This was later modified for commercial use employing a bar magnet, a speech coil at one end and an iron diaphragm, and was given the well-known bell shape associated with his name. Many of the present desk telephone receivers retain this shape, but a horse-shoe magnet is used instead of a bar magnet.

For the carbon microphone, which was invented two years later, we are indebted to Professor Hughes, Thomas A. Edison and the Rev. Hunnings, as their discoveries in this field were all made public in the same year, 1878. From that time the telephone began its conquest of land communications, and later speech was transmitted by submarine cable across narrow sea channels. But there for the time being development stopped.

THIS was the position in 1900, when Professor R. A. Fessenden made the first attempt to transmit speech through space by electric waves, and was able to effect some sort of communication over a distance of one mile. As is well known, the speech currents are superposed on some other form of current or high frequency wave which must be unbroken, not intermittent, and the spark transmission by induction coil and interrupter of that day, although quite satisfactory for telegraph working—I was then effecting radio communication over thirty-six miles—because of the dead intervals between the sparks, was quite unsuitable for telephony. To approach the required condition of carrier current, Fessenden endeavoured to make the wave trains of the sparks overlap by increasing the number to 10,000 per second and he obtained some small measure of success.

(*Continued on page* 19.)

The New Zealand
Radio Record
—AND—
Home Journal

(Incorporating the "Canterbury Radio Journal.")

P.O. BOX, 1032, WELLINGTON.

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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 last insertion.

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WELINGTON, THURSDAY, DECEMBER 31, 1931.

LOOKING FORWARD.

WE should have dated this issue January 1, but we didn't because it was a holiday. Nevertheless the fact remains that it is the first issue for 1932 and the first published during the new regime in broadcasting control. We are confidently looking forward to the coming year as one of the best yet. All around us are evidences of the depression and of its far-reaching effects—but, for radio, it has done a great deal and it will do more. That is why we are looking to the new year for great things. Who knows but that television may come along and, as its sister radio did ten years ago, lift the world out of the trade depression? It is eagerly awaited, and when an acute want is being satisfied the wheels of industry revolve faster, the numbers of unemployed grow fewer, misery and poverty diminish and the spirit of optimism reigns. Already radio, born only some ten years ago, provides employment for millions of workers; and it can supply only one side of entertainment.

Radio is fast making great inroads into the home, and each year closes with an even greater number of listeners than the year before. At present there are in this country some 70,000 licensees, representing a total of 250,000 listeners—implying that one person in every six regularly listens to radio. Is it realised what a tremendous force radio is and what a part it plays in our lives?

AND its popularity increases. In New Zealand radio has been established five years and in that time a sixth of the population have become regular listeners. What will be the state of affairs in another five years, especially if television comes? Perhaps then it will have come into its own and be regarded as a tremendous force that can be put to a thousand purposes and not a mere entertainer as it is apt to be regarded at present.

The reason for the popularity of radio is not far to seek. It is one of the few modern means of entertainment that tend toward family solidity—the cradle of national solidity. Solidity means prosperity. To the radio we turn when we want important news, to hear talks, and when we have not enough cash to go further afield for our entertainment—and many of us are like that these days. We complain of the fare and disagree with the speakers; we could provide better programmes ourselves; yet when the set breaks down it is as though someone has gone out of our lives. The serviceman is quickly summoned and instructed to have the machine in working order in the shortest possible time. And have we not all felt the disappointment when he replies that it will take some time to fix? Yes—we have to be without a thing to realise what it means to us. It does not fill a gap, but it creates a big one if it happens to fall out for even a short time.

We are a cosmopolitan people and difficult to please. If we are not pleased all the time we complain until something is done about it. And then the other fellow has something to say—and so radio goes on. Some day we shall understand and be a little more tolerant. We are changing over to Board control of our broadcasting and listeners who do not understand are waiting expectantly for the first broadcasts of the new year to be something stupendously different. They are going to be disappointed. Whether or not improvements will eventually be made is another question—we are not concerned with that for the moment—we are just asking the impatient fellow to wait and see, remembering that "He also serves who only stands and waits." Even for a smoothly-working organisation to provide a diverse service for four stations for 300 odd days in the year is a big problem. What must it be like for a barely formed organisation to provide that programme? And that is what will confront the Board during the early days of this year.

AND then there is the part played by the radio trade. They have done a tremendous amount to make radio as popular as it is. Engineers have done marvels in their laboratories, making the modern radio as simple and as safe as any household utensil and a great deal more useful than some. They have made sets compact and reliable; and they have trained men to keep them in going order. That is a big thing. A few years ago one paid three times what one does now for a receiver and its necessary encumbrances, and then had a license to get into as much trouble as one wished and more. But the difficulty was that there were not many who could get one out of the difficulties. But it has all changed now. When one buys a set, the manufacturers or their representatives "make it stay sold." The purchaser is satisfied, for his radio regularly brings in entertainment and culture—not always the kind the old set brought in, either.

ALTHOUGH interesting, the year just ended is not altogether outstanding in radio history. Certain important developments have taken place and certain inventions have been brought to our notice, but radio is the same materially as it was twelve months ago. There is this difference, however. There are millions more who have realised just what they have been missing and have joined the ranks of listeners.

We stand on the threshold of another year. We can see back but not forward—but the clouds on the horizon predict prosperity. Already in one of the blackest of years radio has gained ground and attracted to its ranks many who otherwise would have been unemployed. When other factories are closing radio ones are opening, and this bids fair for 1932.

Revolutionary changes? We imagine not. Radio will steadily jog along, will be joined by its sister, television, and the two will jog along in unison, spreading happiness and creating employment.

In our own little sphere we are hopeful of a good year. We shall not expect great things for a start but the change will be quiet and steady. And perhaps some day we might employ hundreds of people to supply one programme a day—and still there are those who would complain.

Welcome, 1932.

Radio Transmitters

Annual Convention

The annual convention of the New Zealand Association of Radio Transmitters was held last week in Christchurch, more than 50 delegates from all over New Zealand attending. The Dominion president, Mr. H. P. V. Brown, presided. Among the delegates were four women operators, including Mesdames P. Cameron (ZL4CL, Dunedin), M. Blake (ZL3DW, Rangiora), and Miss E. Herrick (ZL3BT, Christchurch).

The report of the general secretary (Mr. W. G. Ashbridge) stated that the past year had been most successful. In the short history of the association, in every phase of its life and activity, the New Zealand association had made substantial progress. Membership had more than doubled, and it was estimated that 90 per cent. of the active amateurs in the Dominion were now members. Financially the association had more than prospered. At the 1930 convention the fate of the official magazine "Break In" had hung in the balance, most of the members considering that the cost was too great, but the excellent and untiring efforts of the editors had shown that it was indispensable.

During the year, continued the report, headquarters had been accorded by the Post and Telegraph Department the valuable privilege of reporting upon applications for higher frequency permits, and it was felt that in the future the N.Z.A.R.T. might by this means make 40 metre and 20 metre permits the reward for virtue rather than a matter of mere routine. Four new branches of the association had been formed.

The balance-sheet showed a credit of £38 on the year's working. The report and balance-sheet were adopted.

A motion of approval of the general policy followed by headquarters throughout 1931 was passed unanimously.

After discussion it was decided that shortwave listeners be admitted to membership. Considerable discussion followed on what powers listening members would have, it finally being decided that they have the right to vote on all matters excepting those affecting only transmitters. The meeting decided that it be a recommendation to the executive that the constitution of the association be amended in connection with taking action against amateurs with bad transmitting notes. It was decided to recommend that the executive take up the question. A decision that the association be registered as an incorporated society in the New Year was arrived at.

Tightening Valves

PULLING a valve out of its socket by the bulb may not appear to harm it, but in time there is a possibility that it will work loose from its base. If you have a valve whose bulb has been loosened in this way, you can strengthen it by binding sticky insulating tape over the bulb and the valve-base where these come together.

Radio Licenses

Further Increase Indicated

IT is gratifying to note that the number of licenses in New Zealand is still rising. The latest return from the Post and Telegraph Department indicates that there are now 71,000, as compared with 67,500 a month ago, denoting a rise of some 3500 during a month of what is generally regarded as the "off" season—November. Rather surprising is the increase of about 50 in the number of dealers, indicating that probably radio is considered one of the best trades at the present time. For the same period last year the total number of licenses was approximately 61,000, of which 1200 odd were dealers. The transmitting licenses have increased almost hundredfold, for at this time last year there were 273 compared with 450 this year. The number of listeners' licenses last year was approximately 60,000. The order of the provinces with respect to the number of licenses is the same this year as last, Wellington leading, followed by Auckland, Canterbury and Otago.

DISTRICT.	CLASS.				
	Receiving.	Dealers'	Transmitting and Receiving.	Experimental and Special.	Free.
Auckland ..	20,783	263	108	—	95
Canterbury ..	11,221	153	101	2	45
Otago	8,717	130	70	1	31
Wellington ..	28,944	399	176	4	54
	69,665	945	455	7	225

GRAND TOTAL: 71,297.

Broadcasting an Election Campaign

Australia Makes an Important Move

IN all the important countries of the world, including England, the broadcasting services play a tremendous part at election time. Not only is the service undertaken compatible with that given it by New Zealand stations during an election, but the majority of the campaigning is done over the radio.

In the recent Australian elections the national service allowed the three parties two forty minutes' broadcast each, one for an all-States hook up and the other for a separate broadcast in each State, so that each party had six broadcasts from national stations.

One of the most interesting features of these broadcasts is that wherever possible speakers address listeners from the Australian Broadcasting Company's studios and not from the crowded political meetings. Special accommodation was granted the parties to bring a limited number of party officials and supporters to create the necessary atmosphere. Through these arrangements it was possible to get the Australian election through in record time, and never before has radio played such a big part in public affairs in Australia.

The policy speeches were broadcast from the main stations, but the majority of the campaigning went over the air from the B stations. Elections are godsends to the advertising departments of these stations, and the political organisations pay large sums for privileges.

There was a humorous interlude early in the campaign, when one party was making overtures to a Sydney B station. They were not quick enough and another party jumped in and signed the contract, which covered the time the former party required. This provided material for a violent article in the following morning's paper, in which the B station was cursed for its political prejudice, and this in return drew a terrible answer from the opposing camp.

An interesting feature of the B class campaign was that Mr. Lyons, the leader of the Australian Party, chose to deliver his policy speech to a network of B stations, rather than through the A. An inter-State hook-up of B stations broadcast the election results as they came in.

Complete arrangements were made with all A stations, which broadcast direct from the tally room of the G.P.O. in each State.

March of Television

British Cinemas

IT is persistently rumoured in English newspapers that negotiations are proceeding in London for the introduction of television into British cinema houses.

According to the "Sunday Chronicle," Mr. S. L. Moseley, of the Baird Company, states:—"I can't tell you the name of the company, for I have been placed under a pledge of secrecy, but I feel quite confident that there will be big developments following our negotiations."

It appears that promises have been made that television programmes will be introduced in one of the large cinema circuits in America inside a few weeks. To begin with, the shows will last for half an hour, but it is reported that television scenes will be shown on a 10ft. square screen. Later on it is anticipated that full-length plays will be given.

Radio Control

Change-over Procedure

THE first official meeting of the newly-appointed Radio Board was held in Wellington last week. A number of urgent matters relative to the change-over were dealt with.

Practically all the present staff of the company have been taken over by the board and will carry on, in the meantime, as at present: some reorganisation may be expected at a later date.

The head office of the board will be located in Wellington, and the staff will be accommodated on the ground floor of the 2YA studio building in Featherston Street. The staff (now in Christchurch) are expected to arrive in Wellington early next month, and if the 2YA premises are not actually ready for their use, temporary accommodation will be provided for them.

It is understood that the policy of controlling the entire service from head office will be largely altered, and the service will be de-centralised, enabling the station directorates to act to a considerable extent on their own initiative when special conditions make it advisable.

It is now generally realised that the board, owing to the lateness of its appointment, will be unable to make any marked change in programme policy at the New Year. As the Broadcasting Act provided for the establishment of an advisory council directly representative of listeners' organisations, it is probable that the board will not attempt any drastic change until it has had the opinions and advice of his council, which has not yet been appointed. The New Year change-over will therefore be almost unmarked, except by brief official statements from the broadcasting stations.

One of the outstanding broadcasting feats which may be expected to mark the early stages of the board's control will be an eye-witness's description of Norman Smith's attempt to break the world's motor speed record on the Ninety-Mile Beach. Arrangements for this event have been completed by the board. A portable radio transmitter will be located on the beach at Kaitaia, and will send to a receiver at the Kaitaia Post Office. Thence the description will be relayed by landline to 1YA and 2YA, and if the time is suitable and lines are available, to 3YA and 4YA as well.

The process of transfer of the Broadcasting Company's property to the board is not at this stage an affair of the board at all; in accordance with the original agreement the company's property has to be taken over by the Postmaster-General, who will in turn make a "deal" with the board. The company's assets are to be taken over at a price to be agreed upon, or failing agreement, at a price to be reached by arbitration. Agreement has been found to be impossible, and Mr. Justice Blair has been chosen as the arbitrator.

IF the wrong voltage is applied to its screening grid the average S.G. valve misbehaves in a way that ordinary valves cannot do. Such a wrong voltage may send the valve into oscillation, causing unsteady and erratic reception.

A Noted 2YA Artist

George Ellwood---Cellist, Conductor

ONE of the most consistent performers at 2YA is Mr. George Ellwood, 'cellist, who has been associated with the station almost since its inception. Mr. Ellwood is a brilliant musician, and it will be remembered was the 'cellist of the Symons-Short-Ellwood trio, which was heard regularly from this station in 1927 and 1928. Mr. Ellwood, who is a well-known Wellington teacher, was born in Yorkshire, England, but came to New Zealand at a very early age. His father, a keen devotee of music, bought him his first 'cello and taught him the notes, after which he had to rely upon his own inborn talent and capacity for hard work. The 'cello was a full-sized instrument, and so large that young George had to stand up in order to manipulate it. Before long he began to play chamber music with his elder brother as a violinist, and his sister as pianist, and thus at the early age of seven he commenced his association with chamber music.

One morning Hugh Gorlitz, the well-known impressario and the manager of Gerardy, Kubelik and other distinguished notabilities, heard the youthful trio and immediately arranged a New Zealand tour. After a brilliantly successful tour in New Zealand, during which time young George was termed by the Press as a pocket edition of Gerardy, the trio returned to Europe to study. Shortly after his return to London, the young 'cellist, armed with a letter of introduction, sought out Gene Gerardy, who, after hearing the lad of eleven play, sprang from his chair, exclaiming: "I will teach you for nothing"—a great privilege, as Gerardy's fee was four guineas an hour. Whilst under the personal tuition of Gerardy, George Ellwood entered the Liege Conservatoire, and was admitted to Gerardy's master class. At the conclusion of nine months' study, he entered for a scholarship and gained "The Premier Prix." It is believed that this is the first time in the history of the Conservatoire that this great honour has been gained by a boy of twelve. From the Liege Conservatoire have graduated many famous string players, such as Gerardy, Ysaye, Ovide, Joseph Jongen, Charles de Berliot and others. The concours examination of the conservatoires in Belgium are open to public attendance, so much are they considered of national importance. After George Ellwood's performance the whole audience of two thousand people gave spontaneous abandon to a great demonstration of approval, eclipsed only by the ovation accorded the artist when he was acclaimed as the winner of the coveted honour. Ellwood was henceforth known as the "little foreigner who had gained the Premier Prix."

Leaving Liege, Ellwood joined the trio and followed Gerardy to Brussels. During this time they studied chamber music with zealous intensity, sometimes Pauline Ellwood and sometimes Madame Gerardy—a very accomplished pianiste—would take the piano, with George at the 'cello and his brother the violin, Gerardy playing any part that was missing. It was during these months that George Ellwood acquired a great love for the beautiful music, encouraged and inspired as he was by Gerardy's own fine emotional sense. From Brussels he followed Gerardy to Berlin for further study, and eighteen months later they returned and toured New Zealand.

In 1913 George Ellwood returned to London to play for Madam Clara Butt's great concert at the Albert Hall, which was to be the grand finale of her world tour. Unfortunately, through ill-health, he was unable to perform, and his place was taken by Jacques Horman, the great 'cellist. On his recovery Mr. Ellwood went to Berlin, and a few days later the Great War commenced. He made a remarkable exit from Germany through mixing with some four thousand undesirable Russians, whom Germany was deporting. He boarded a Swedish vessel and eventually found his way back to England, where he visited the Guild Hall School of Music for the purpose of studying harmony. Completing his course, Mr. Ellwood returned to New Zealand and established himself as a teacher in Christchurch, where he quickly won an enviable reputation.

In 1918 Mr. Ellwood returned to Europe, proceeding to Brussels, where he commenced a course of composition, instrumentation and conducting with Jongen, the director of the Brussels Conservatoire, also studying and choral training with Maurice Weynandt.

Mr. Ellwood on this occasion remained on the Continent for over four years, visiting France, Holland, Germany, Italy, Belgium, England, and Denmark. When he returned to New Zealand, he settled in Wellington. Since his arrival in that city his musical activities have been indeed varied. He was choirmaster at the Basilica for over two years—a position he resigned owing to the pressure of teaching.

He is a much-sought-after soloist. For over two years he was with the Radio Broadcasting Company, first as a member of the Symons-Ellwood-Short Trio, then as conductor of the original 2YA Orchestra. This position he resigned when offered a tempting engagement to form and conduct the orchestra for the Majestic Theatre, Wellington. This orchestra was considered to be one of the finest of its kind in Australasia. Unfortunately at the advent of the "talkies" this splendid body ceased operations.

For the last two years Mr. Ellwood has been the conductor of the Palmerston North Orchestral Society, a capable body of about 60 players, and is fostering a love of music in that city.

In spite of the great demand made upon his teaching, he has still found time to perform for Wellington audiences—in conjunction with other well-known artists of Wellington—over 80 masterpieces of chamber music, trios, quartets, etc.

As a teacher he is very well known. He has successfully coached pupils for the highest examinations — L.A.B., F.T.C.L.—in theory, violin, piano and 'cello. This record is undoubtedly unique in Australasia, and Mr. Ellwood certainly made musical history at the Concert Chamber when over 40 of his 'cello pupils massed and performed in unison, with surging tone, the Air of Matheson and Largo of Handel.

Radio in the Argentine

Advertising Condemned

RECENTLY a part of the Press of the Argentine Republic carried out a systematic attack upon radio publicity.

In the words of one Buenos Aires journal: "There is no getting away from the fact that the owner of a wireless set intensely dislikes radio publicity. Its suppression would meet with general approval. . . We do believe that over 50 per cent. of wireless owners would welcome the opportunity of paying ten dollars (about 16s.) a year for freedom from the torture they have to endure under present conditions."

The Coming of Television

Many of the articles published about television and its present state of development are merely speculation, and hence readers will welcome the following discussion on television by no less an authority than David Sarnoff, president of the Radio Corporation of America. In it he tells just how far television has progressed, and what may be expected from it when it takes its place with radio as a public utility.

WHERE is television? When will it be ready for the home? What form will it assume? How about the necessary television transmitting stations? What are its likely effects upon the established radio and motion picture industries?

These are pertinent questions, frequently asked. The answers are of peculiar significance to Hollywood, yet thinking men and women of all the world likewise are evincing keen interest.

Let us then preface any discussion of this subject with the general statement that television, or the process of transmitting images by radio is still in the laboratory stage. True, rapid progress is being made. The sweep of events during 1930 and in the first months of 1931 has been very substantial indeed. Television has been brought definitely nearer commercial development by the research and technical progress of the Radio Corporation of America during this period.

One year ago, television was a subject of engineering conversation and a topic for technical dispute. It now has progressed beyond that point. To-day, transmission of sight by radio is a matter of accomplishment, not of speculation. It must be understood, however, that the present sporadic activities in this direction cannot be classed as a practical service. They are purely experimental, but as such deserve encouragement and merit public interest.

The present status of television might be likened to the condition of radio in the immediate pre-broadcasting era, when amateurs were beginning to hear faint sounds through the air. Voices and music were passing through space in those early days of radio; comparatively, there are actually some images passing through the air to-day. They are being received by established experimental stations, and by amateur operators in various sections of the United States. In this connection, it should be observed that the early success of radio broadcasting was stimulated in no small measure by the amateur wireless operators of that day. Similarly, the amateur operator in television is now playing his part in the development of this new service.

David Sarnoff.

The next stage—and I should anticipate its realisation by the end of 1932—should find television comparable to the ear-phone stage of radio. At this point, the public may well be invited to share in its further unfolding. By that time, television should attain the same degree of development as did radio sound broadcasting in the early period of the crystal set. This does not mean that the actual physical structure of the first television receiver will be similar in any way to the crystal receiver; the similarity will lie in the class and condition of the service. The visions which first come through the air to the public will be of the same embryonic quality as the first faint sounds which sent mother hurrying to the ear-phone of the boy's crystal set in the attic.

When television reaches this stage, rapid strides may be expected comparable perhaps with the growth and development of broadcasting of sound. The progress to follow should make possible the projection of moving images on a screen on the wall. Reception of sight by radio then will be comparable to the loud-speaker stage of sound reception.

The Radio Corporation of America is conducting its present experimental developments in television through a large research staff in the RCA Victor plant at Cambed, New Jersey. When television emerges from this experimental stage it will be handled as a service by the National Broadcasting Company.

The motion picture industry need experience no alarm over the impending advent of television. There will be no conflict between television in the home and motion pictures in the theatre. Each is a separate and distinct service. History confirms the fact that the creation of a new service for the public does not result in the elimination of an older service, provided each has something of its own to give. On the contrary, many examples might be cited to prove that the reverse is true. The telephone did not displace the telegraph. The radio did not displace the cable. The incandescent lamp did not displace the candle; more candles are being sold to-day than before the creation of the incandescent lamp. And television in the home will not displace the motion picture in the theatre. Public theatres will continue to operate because people will go there in response to the instinct for group emotions and to see artists in the flesh. These are human demands which television in the home cannot satisfy.

Since the dawn of the new era of electrical entertainment, untold millions have been added to our audiences. It is interesting to compare the opportunities of this new era with those of the past. The lifetime audience of Demosthenes was not as great as a one-night audience of Amos 'n' Andy. Napoleon and Kaiser Wilhelm, showing themselves in their splendid regalia before all their spectators, never in their lives were seen by as many eyes as saw Richard Dix in "Cimarron." The sound of all the guns and cannons fired in all the wars since the dawn of time did not reach as many ears as does the crow of the proud Pathe rooster on the talking screen.

THIS vast increase in the entertainment audience has been made possible by the introduction of modern science into the older arts, and now television will come to open new channels, to provide new opportunities for art and the artist and to create new services for the audiences of all the world.

What Do You Know About . . . . AERIALS? . . . .

The Technical Editor Explains

IN response to many requests, we propose in a series of articles to review the questions asked in Section "B" of the Radio Serviceman's examination, giving what we think to be the points looked for. These questions are of general interest and their answers, we feel, should help all those who are looking to get better reception. This week we deal with Question 1.—Sketch and give details of the complete outdoor aerial-earth system showing the types and classes of wire, stating any precautions you would take regarding electric power wires.

THE subject of aerials is an old one, and it has been dealt with in this and other publications many times, so there is really little excuse for anyone answering the question poorly. Let us take in order the points we think the question involves.

Situation.—The situation of an aerial is governed by two factors, first the space available, secondly proximity of electric power lines and buildings and trees. The underwriters' regulations state quite clearly that an aerial must not be erected in such a position that, should either the aerial or the electrical wires fall, sag, or sway, they will come in direct contact to one another. Secondly, that they may not be so placed that anyone can make simultaneous contact with them both. There is no stipulated height, nor length, nor do the rules prohibit aerials crossing over buildings, etc., but other factors enter at this point.

Generally speaking, it is best to erect one mast distinct and separate from buildings. This gives the aerial a chance to collect the maximum amount of energy and minimises shielding. It is possible to run an aerial between two chimneys, but it will be in such close proximity to the roof that all power will be absorbed. Similarly an aerial should not be too close to trees or other earthed objects.

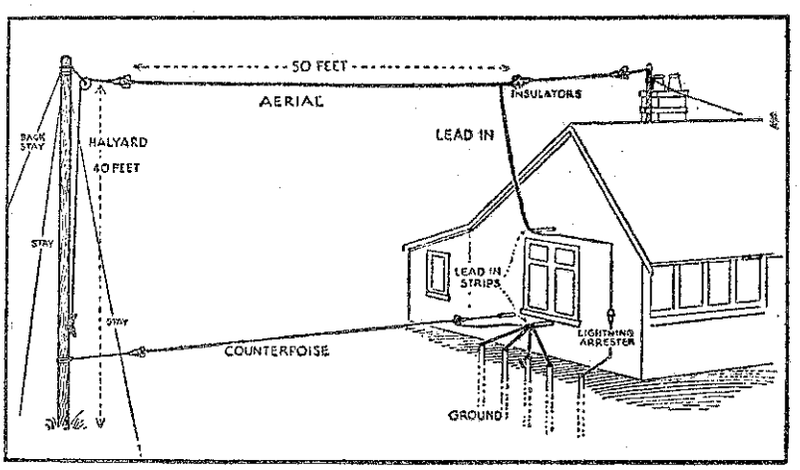
The masts should be well stayed on three sides, one stay being in line with the aerial wire and the other two at right angles. As a matter of fact, the regulations state that all masts shall be guyed in a workmanlike manner, and that the supporting structure shall be of adequate strength to stand the climatic stresses and strains. Quite frequently the mast nearer the lead-in can be supported by the house. If it is, care must be taken that the lead-in is brought in clear of roofs, etc. It is better held out from the wall by a separator of some description.

Generally speaking, in erecting an ordinary aerial directional effects are not worth worrying about. The lead-in should come in from one end and this constitutes the popular "L" type aerial. With the "L" type aerial, the lead-in should slope backward from the aerial, not underneath it. The lead-in, which plays just as an important part in picking up the radio wave as does the horizontal part of the aerial itself, should be well free of the walls of the house. If joins are essential they should be soldered.

To minimise the pickup from electric power mains, the aerial should be erected at right angles to them.

Height and Length.—An aerial should be as high as possible, but the total length of the flat top, plus the lead-in, should not exceed 100 feet, if a multi-valve set is employed. A long aerial causes the selectivity to be unsatisfactory. Generally speaking, an aerial should be as short as possible, consistent with good results. Not only will a long aerial pick up a good deal more noise, but only rarely can the set be opened up fully to make the most of the length.

In a "T" aerial, the length is that of half the flat top, plus the lead-in, which should always be in the dead centre and vertical. Little is to be gained by using a twin-wire aerial, unless the wires are separated from four to six feet. Even then the twin aerial should be erected only in places where it is impossible to get sufficient length from a single "L" aerial. The average dimensions for an aerial are height 30 to 50 feet, length 70 to 100 feet.



A typical aerial and earth installation.

Gauge and Covering of the Wire.—The regulations state that where the span does not exceed 100 feet the size of the aerial shall be 7/029, or No. 14 s.w.g. Where the span exceeds 100 feet the wire should not be less than 7/036, and shall not corrode excessively. This implies the use of rubber or enamelled insulated wire, but for most purposes the latter is the more suitable.

The lead-in must be of copper or other metal which will not corrode excessively, and in no case shall it be of a smaller cross section than 7/029, or 14 s.w.g.

The earth wire may be bare or insulated, and must be not less than 7/029.

Protective Devices.—Somewhere between the earth and the set a lightning arrester of approved design must be installed. It is not essential, though it is preferable, that this should be outside, and it may be run to the same earth as the set—a separate earth is not required by the regulations. It should be installed as near as possible to the point where the lead-in enters the building, and shall not be placed in the immediate vicinity of easily ignitable material, and where exposed to inflammable gases, dust or combustible materials. The use of an aerial/earth switch for shorting out the arrester is not essential. The lead-in must enter the house through a non-combustible tube.

The Earth.—So long as a good contact is made with the ground, it is immaterial what is used for an earth. The usual methods of earthing a set are through the cold water system of the house or a pipe or series of pipes driven into the ground. Other earths comprise buried metal objects, to which are attached the earth leads from the set. The earth must be kept damp, and it is preferable that it be dressed occasionally with salt. Care must be taken that corrosion of the earth-wire at the point of attachment to the actual earth does not take place. Where galvanised pipes are used a clip approved by the fire underwriters must be used. Gas piping shall not be used for earthing devices nor shall the conduit used in the electric wiring system (the third pin of the radio set) be considered an adequate earth. Every radio set should have a separate and distinct earth.

Insulators.—Good insulators should be used at each end of the aerial. Preferably they shall be attached to a halyard so that the aerial may be let down from time to time and the insulators cleaned. Glass or pyrex insulators are the best, though large type porcelain ones are quite satisfactory. As a certain amount of cleaning is occasioned by the use of guy wires, it is advisable to use at least one in every guy wire running from the mast. Particularly is this necessary in the case of iron or steel masts.

Counterpoise.—A counterpoise, which is an aerial slung underneath the regulation one, often can take the place of an earth. It is not nearly as good, but it is very useful in combating noise. It must not be joined to the regular earth of the set to the earth terminal. In the sketch it is shown in conjunction with the ordinary earth, but it is only for illustrative purposes.

Those in brief are the points we think the question involves. Now, how many put everything in? Of course, it would be possible to elaborate all those points, and talk a great deal more about the aerial, but where time is limited one must keep very strictly to the point.

Useful Hints

IF you use the cat's whisker type of crystal set, avoid scratching the crystal heavily. A light pressure is usually far more likely to give good results.

IF your signals tend to fall off in wet weather it will probably be found that the aerial insulators are inadequate in number or that rain is spoiling them and making a conductive path across from aerial to "earth."

THE loudspeaker is one of the most inefficient accessories associated with radio, and even good ones can hand out only about 10 per cent. of the energy that is delivered to them by the radio set!

ARCHIBALD'S RADIO RESOLUTIONS

By

BERTRAM POTTS

With Illustrations by

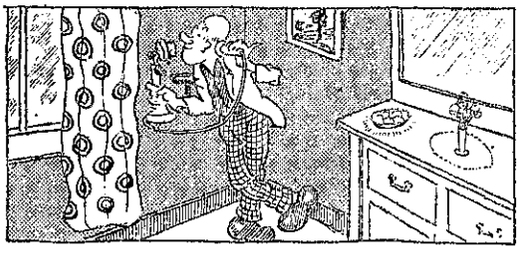
THE AUTHOR

NOBODY knows what 'is loudspeaker (radio) 'as in store for 1932, what laughs it will split yer sides with, what tears it will sob into yer 'anky, what new 'owls it will poke into yer ear! Lots of 'owlin' valves will croak their death-song and be a 'appy release to the neighbours! Many a loudspeaker born before the days of the movin' coil will shuffle off this mortal coil. Many a aerial stick will come a thud because the guy ropes 'as rust and bust. Radio is full of surprises!

At times a song will turn up wrong, and strong men feel like wax,
While meek, mild men will there and then start askin' for a axe,
And folks in tears will turn to beers, and bridegrooms to their brides,
And though abed with splittin' 'ead, yer'll laugh and split yer sides;
When valves conk out without a shout when thrills are comin' through
Cut out the swears, get out yer spares, and yer won't miss "The Clue!"
When lotteries is bein' drawn yer 'ears yer've won first prize,
And learns that Catts 'as lost 'is spats before they advertise;
Yer all agog with mouth agape as wrestler bites the ref.,
And grandmas cows with toothless jaws which shows she ain't so deaf!

Yes, radio 'as more surprises than a sausage, which opens up the old question: "Should a butcher tell?"

Next year, I resolves to 'elp radio! I rings up the broadcastin' place and offers to take control of radio in New Zealand, to captain the radio-ship along the ether waves, to lug the lugger through the storm of static, to put pillows among the billows, and to keep radio off the rocks. They says that they 'ears I'm to be appointed adviser to the new Radio Board! The secret's out!



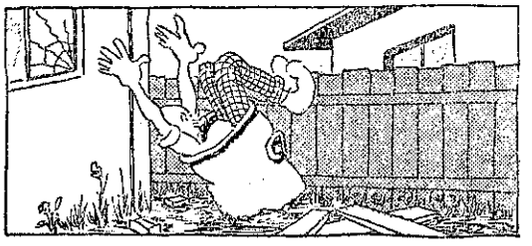
I 'as resolved to take the job when proferred
To keep the Board from bein' bored with bores,
To take three thousand quid a year when offered
And 'elp to silence all the listeners' roars
By makin' programmes perfect and give prizes
To them what never utters one complaint
To answer all the folks what criticises
And show their problems are not what they ain't!
I'll pass a law to see that all the 'ouse-tops
'As wireless sticks with nests stuck on for birds;
When I starts out, I bets that all the grouse stops
For Archibald's a man of deeds—and words.
I'll please the retail trade by recommendin'
That folks should buy a new set every year,
And please the purists just by superintendin'
All grammar when it don't seem none too clear!
When I'm in charge, well, nothin' will be rotten,
And prayers for me will rise from church and crooks;
I'm sure me name will never be forgotten—
That Archibald will live in 'istory books!

I feels that this is a big responsibility and I seeks a quiet place for meditation and goes down to the wharf and sits on the steps listenin' to the waves lappin' and thinkin' 'ow lucky I wasn't born a mussel! 'Ow difficult it would be to express me thoughts surgin' within me breast—if a mussel 'as one. If I opened me shell and spoke, would the world understand that a mussel 'ad a message, or would I be exhibited in a side-show in fear and tremblin' that the fat lady or the livin' skeleton could not curb their pangs of 'unger!

But some drunken sailors come past, lifts me into a empty barrel and pushes me on to the ocean wave before I could broadcast "Robinson Crusoe." Me opinion of sailors goes down! Every time I winked the tub tipped! I keeps wonderin' 'ow Diogenes kept 'is end up, and if anybody 'olds the record for playin' a tuba in a tub! I thinks about "Rub a Dub Dub," too!

I used to think Diogenes a simple sort of guy
Until I'd been inside that tub and 'ad a silent cry;
I wondered 'ow 'e cooked 'is grub and 'ow 'e 'ad a bath
And 'ow 'e coped with frisky whales what played across 'is path;
And 'ow 'e oust the octopus and cut the cuttle fish
And 'ow 'e parried swordfish off and slew them for 'is dish;
But 'e don't 'old the record for joy-ridin' in a cask,
The golden cup is 'eld by three what 'ad a 'arder task:
A candlestick concocter, and a doctor, baker, too,
Composed a club inside a tub—a risky rendezvous!

I wonders, too, if I'll ever 'ave me Saturday tub again! At last some sailors rows out in a boat and rescues me. Me admiration of sailors goes up. Next day the missus and our 'Erbert goes with the neighbours for a picnic, and I spends a quiet day meditatin' in the garbage tin where I sits stuck after steppin' backward and trippin' over some wood! I resolves to forgive 'owlers, sopranos, the speeches, and the "Shippin' at the Port of Wellington!"



Yours with a 'opeful 'eart,
ARCHIBALD.

P.S.—I wants to wish everybody the Compliments of the Seasonin' and to thank them what 'as written about me from all parts of New Zealand.

Our Mail Bag

While we welcome the expressed views of listeners on topics pertaining to radio, we ask that these communications be kept to minimum length, as heavy demands are made upon space. Mere reiteration of arguments cannot be accepted for publication, and we cannot take responsibility for views expressed. Address communications to the Editor, and sign all correspondence, though a nom-de-plume may be used for publication.

Control Board.

NOW that the Radio Control Board has been appointed, and as a consequence listeners will have to say good-bye to the Radio Broadcasting Company, I think it only right that we should express our appreciation of the very fine service performed by them in bringing broadcasting in New Zealand from practically nothing to the high standard it has reached to-day. As one who has been a continuous listener from the first formation of the company to the present, I have a keen sense of what has been accomplished, and say "Good-bye" with regret. Now for the future. The agitators have succeeded in saddling us with the R.C.B., and it is up to listeners to see that no more of the funds provided by them are wasted, but that the service shall be definitely improved. To that end I suggest the following:—Stations: Theoretically, we have at present a choice of four YA stations, plus an unknown quantity in the B class ditto. Speaking for this district (others must speak for themselves), with a reasonably good set, this is largely so by day, but at night, which is by far the most important, it is far from being so. Owing largely to their want of power and consequent inability to overcome interference such as static, etc., three of the YA stations can be classed only as about 25 per cent. efficient. In my opinion, all districts should have a choice of at least two efficient stations, and for this 1 and 3YA at least should have their power increased—say, five times, forthwith or as soon as possible.

Programmes, provided 1 and 3YA are made efficient, would be little to complain of as a fair choice would be available.

B class stations: Owing probably to their want of power, these can only be of use locally, and before being subsidised to any extent, would need very considerable improvement. 2ZW is the best, and that only about 10 per cent. efficient at night in this district. Possibly if connected by relay lines they might serve a useful purpose in bringing the main stations to difficult districts. Any subsidising would, therefore, need very careful consideration. I have condensed these thoughts as far as possible, and hope they are not too long. Thanking you, etc., I am, yours trly,

LISTENER H.W.

Dunedin Wool Sale.

I HAVE just listened to the broadcast of the Dunedin wool sale by 4YA, and I consider that a good broadcast was marred by the absence of a description of the different lots under the hammer. I understand that a description was given in the northern centres. Why not at Dunedin?—"Banspec" (Otago).

Shortwave Club Broadcasts.

MAY I voice the opinion of many others with regard to the decision of the Postmaster-General to ban the broadcasting of the New Zealand Shortwave Club news and notes. As stated by Mr. McDonagh, the secretary of the club, the reasons for this refusal are: (1) Because it is likely to cause interference, and (2) because there is not enough interest taken in what the club has to offer. Now, how many listeners can truthfully say that a "ham" station really causes interference? Only those few perhaps who possess unselective sets and will not go to the trouble and very small expense to remedy this defect. If these broadcasts were carried out after the "locals" had closed down, I don't think even these few would have cause to complain. As for the suggestion that not enough interest would be taken in these broadcasts, one has only to see the large mail which the secretary of the club receives each week from backblocks listeners to realise the immense amount of interest being taken in shortwave work generally.

It is almost impossible for overseas stations to advise us when important tests are being carried out, except by announcements from the stations concerned. The information usually arrives by mail less than a week before the actual test, and this is immediately rushed into print. The "Radio Record," say, is published about three or four days later, and we in the city get our copies with perhaps a couple of days to spare, but what about the backblocks listeners? Even if they get a radio paper at all, it is certain to arrive too late for the particular test, and unless they happen to have tuned him in they miss what might have been an important broadcast. On the other hand, if this ridiculous ban had not been placed on the "ham" stations, the enthusiast could have tuned in with plenty of time to spare. Then why, with so poor an excuse, should the Postmaster-General refuse what is quite obviously a benefit to the radio public in general, and also an indirect means of increasing the revenue by (1) an increase in the number of radio licenses taken out, (2) an increase in the sale of postage stamps, and (3) a decrease in the ranks of the unemployed brought about by an increase in radio sales?—"LOOK AFTER THE PENCE. . . ." (Wellington).

Case for "B" Stations.

IN your issue of December 4 you published an excellent letter under the heading "The Case for 'B' Stations." I agree with your correspondent on the whole, but consider there are one or two weak points, and suggest they could be improved on with very little additional expense. In the first place I think the three minor YA stations should have their power lifted to 1 k.w. This should increase their effective range by 60 per cent., to put a conservative estimate on it. We certainly do not want any more relay stations or "B's" as far as that goes. Any more licenses should be granted on locality only so as to serve sections not already supplied and where possible licenses cancelled in districts over-supplied as Auckland and Dunedin.

Your correspondent decries the relays by telephone, but with all due respect to him and his technical friend I would like to point out that the B.B.C. has very successfully relayed their international programmes through at least five different "B" stations. Now I have listened to all, except 1ZH, which I have not been able to log, and in every instance consider the relay to be equal to the original. In any case it would probably be far cheaper to contract with the P. and T. to put a special relay line through to strategical points. Your correspondent would rely on gramophone records. The "B"-stations are at present experiencing their second tiff with the record manufacturers, and it seems to me that there will always be friction between these two, so that this source of entertainment is likely to periodical interruptions. What the position of stations who own their records is I am not quite clear on. Perhaps, Mr. Editor, you can enlighten me.

The "B" stations have certainly filled in a very large gap, and the thanks of a large section of country listeners is due to them, but at the same time the fact must not be overlooked that most of these are backed by a commercial view, as well as service, as most represent or are radio and gramophone dealers, and the advertisement side looms largely in their services.

In conclusion, I would like to say that I agree with your correspondent that money should be spent sparingly, and I wish the new board every success. —Moi Whare.

[The legal position on the point raised by our correspondent is controversial. It is claimed, on the one side, that broadcasting stations who have bought gramophone records under the ordinary conditions of sale obtaining in the past are entitled to use those records as their private property. On the

other hand, it is claimed on behalf of the gramophone companies that the records are sold only for private use, and that the "public performance" or broadcasting of a record is another act, against which they can protect themselves by legal process. To clarify the position for the future, it is understood that all gramophone records will bear a stamp specifically stating that they are not to be broadcast except by permission of the manufacturer. We anticipate and hope that the whole position will be the subject of a speedy, amicable arrangement.—Ed.]

Gramophone Records.

THE announcement of restrictions on the broadcasting of gramophone records will come as a bombshell to most listeners, although it will not altogether surprise many who have followed the course of events in recent years between the Performing Rights Association and the broadcasting companies.

This action is due to a concerted and no doubt word-wide effort on the part of the gramophone companies—a powerful organisation—who are seriously concerned over the shrinkage in their revenue. In their efforts to prevent the landslide they point to the broadcasting companies as a contributory cause of their troubles, alleging that the broadcasting of popular records affects the sale of such records to the public.

This in itself is a moot point. When a popular "talkie film" of a musical nature is displayed, gramophone dealers have reported an increased demand for the records, and the same applied more or less to broadcasting.

The reduced turnover of the gramophone companies is governed by the same cause as that affecting other trading concerns to-day—namely, the financial depression which has reduced the purchasing power of the individual. Records being more or less of a luxury would naturally occupy a leading position in the list of personal economies.

It is to counteract the results of the depression that the gramophone companies are clutching at any course of action which in their opinion will increase sales. But what of the listeners? Are they to stand by without protest, and see one of their best forms of entertainment taken away or restricted in such a manner that the broadcasting companies and listeners would be reduced to marionettes controlled by strings pulled by the gramophone companies?

It is an impossible position. It affects New Zealand to a greater extent than most other countries owing to the fact that the only other alternative, the almost exclusive use of local talent, is so limited in its scope by virtue of our isolation and small population, that the revenue from license fees would ultimately be seriously depleted with disastrous results to the future of broadcasting in this Dominion.

I make this statement with every respect for local talent, but it will be generally agreed that the record brings the world's best to our fireside. The gramophone companies will admit, too, that the development of the wireless valve has revolutionised the gramophone and revitalised an industry which had not made much progress for many years. When the panotrope and wireless gramophone combination reached the market a few years ago, the sale of records was such as to enable the gramophone companies to declare dividends of sixty and seventy per cent. The gratitude of the gramophone companies is certainly not reflected in their present action.

What is the remedy? Whatever steps the New Zealand Government may take will not permanently cure the difficulty. It would only be a palliative, and to that extent it is highly desirable that legislative action be taken in New Zealand as quickly as possible to save the B stations being forced out of existence and to smooth the path of the new Broadcasting Control Board which takes office on January 1.

The birth and early infancy of the new board already shows signs of trouble and travail, but with careful feeding and nursing by the listeners and all concerned, the baby will no doubt grow into a healthy youth and repay its foster parents for all the care and attention lavished upon it.

So much for the palliative, but what of the cure? If the rights of the Performing Rights Association are not to be looked on as an incurable disease affecting listeners the world over, the remedy will have to be effected by joint action. New Zealand is not the only country affected.

The movement is world-wide. It calls for discussion by Britain and the Dominions at a round-table conference, and in this connection may well form one of the subjects at the next Imperial Conference. Until this bone of contention is finally disposed of, listeners may expect a continual recurrence of the trouble in one form or other. By throwing their weight into the controversy, the voice of public opinion expressed through the listeners will force a solution of the problem.—I. Meltzer.

Empire Broadcasts

IN preparation for permanent Empire broadcasts, for which it is building a special station, the B.B.C. begins experimental transmissions on January 4, 1932.

An Advocate of Moderation.

ACCORDING to a recent "Radio Record," the gramophone companies have placed a ban on the broadcasting of recordings without their permission, claiming that this is detrimental to their sales. There is certainly some truth in this, as it is a well known fact that some B class stations absolutely murder the latest hits by giving us them for breakfast, dinner and tea until one gets tired of hearing them. But if the stations were limited to, say, three broadcasts of a popular hit per week there would not be the same tendency to kill a recording. But there are two sides to every argument.

It is equally true that broadcasting, judiciously regulated, can, and does, aid sales of recordings. As an example, take the recording "Good-night, Sweetheart." This is, I believe, the latest hit. It has been played not more than five times a week by Dunedin B class stations, and the result is that up to last week-end the recording could not be obtained in Dunedin, all stocks having been sold out. In fact, I know of one concern who had an order placed for thirty of this item to arrive, and out of that thirty, twenty were already sold. So that it would appear that if the use of these recordings of popular hits were regulated, the broadcasting of these items could materially aid the sales of recordings.

It would be rather a pity if the B class stations were forced to close owing to their inability to fill their programmes, since they depend upon recordings for practically all their present programmes, as, personally, I consider that these stations give listeners better entertainment, the ordinary YA station broadcasts being slightly heavy at times. Besides, one is always sure of light music from some of the B stations. I quite realise that the YA stations try to please everyone, and that this is a hard thing to do. They do it very creditably. But I do think there are too many vocal items in proportion to instrumental ones. However, I may be biased in favour of instrumental items. There is one thing, however, I do not like, and that is the present series of international programmes as broadcast from 4YA every Monday. I do not consider that these are nearly as good as the first international programmes with the Lockharts, Hy-Wide and Handsome, etc. They may, however, suit some.—DX640C (Dunedin).

News and Views of the D.X. Club

Answers to Correspondents

DX1220C (Timaru): You do not mention the approximate frequencies on which the stations you require identified were transmitting.

"Amuri" (Invercargill): No, the letter you received from 7CA, Calcutta, does not definitely verify your report.

P.C. (Hastings): Write Te Aro Book Depot, Courtenay Place, Wellington. You do not give nearly enough particulars of the stations you want identified. Reception is always better at night than during the daytime because in the day the ionising influence of the sun neutralises the action of the Heaviside layer and thus prevents reflection of the "sky wave." Consequently the only wave you receive is the ground wave. At night, however, the Heaviside layer reflects the "sky wave" back to earth, and increased signal strength results.

"Sparks" (Waverley) would like a dxer with a five-valve battery set to correspond with him. "Sparks's" address may be obtained from the offices of the "Radio Record."

DX76OC (Dunedin): A revised list of the Australian stations which are barred for the competition appears in the December "Log." If you and your friends would send in your opinions concerning the revision of the competition rules they would be given every consideration.

DX27W: Why not: If you have a good set, good aerial, etc., and plenty of patience I should think Seatoun Heights one of the best spots around Wellington. A resident up there told me he had great reception from America. Of course you will have to give up a lot of sleep if you want a good dx harvest. DX21W: Some stations are long-winded, but usually come to light. My "black listers" are KZRM, Manila; 3SH, Swan Hill; 4RK, Rockhampton; 2GB, Sydney; and JOIIK, Sendai. Reports were forwarded these, together with return postage, in August-September last. I think the binding covers for "Log" a good idea.—DX25W (Miramar).

Are YOU a Member of the DX Club?

If not, post your application to the DX Editor, Box 1032, Wellington, enclosing 2/6 to cover cost of badge and certificate (post free). Subscription to the "Radio Log"—the dxer's own magazine—is 6/6 per annum, post free. Book your order now and receive the latest in dx news.

Addresses and Addresses Wanted

THE address of KMTR, taken from a verification, is 915 Formosa Avenue, Hollywood, California. 7CA's address is Indian State Broadcasting Service, 1 Garston Place, Calcutta.—"Amwu" (Invercargill).

Identification Wanted

At 1.35 a.m. on Dec. 21 I picked up a shortwave station on dial reading 13. 2ZX comes in on 15. I heard music and then speech in a foreign language.—DX46W (Wanganui).

DX Topics

Beverage an Improvement.

VERIFICATIONS just to hand include: EAJ7, Madrid; Radio Strasbourg, France; RV12, Moscow; XER, Mexico; ZTC, Cape Town; VUC, Calcutta; CFRB, Toronto; CJOR, Vancouver; 4TO, Townsville, Queensland; and a number of Americans. I am using a Beverage aerial 8ft. high and 1000ft. long, and I find it a big improvement on the average aerial. I have definitely logged six Americans and one Canadian all using power of only 100 watts.—DX76OC (Dunedin).

DX "Policemen."

IN a recent letter I stated 4ZL was going off the air. It now appears my information was incorrect, as this station was broadcasting on the evening of Dec. 14. I consider it would be a good idea to hold DX Club meetings at each of the four main centres—Dunedin, Christchurch, Wellington, and Auckland. It would give members an opportunity to meet one another and to compare notes. What do other members think? Re the blacklisted stations: Why not appoint a dxer in each town where there is a broadcast station to answer members' queries concerning unconfirmed reports? The member inquiring should enclose a stamped and addressed envelope in addition to particulars of report made, such as date, time, and items heard.—DX64OC (Dunedin).

DX Jottings.

I NOTICE J.P.C. (P.N.) and another dxer have received cards from 1ZM. I sent in another report recently, also enclosing a small donation for a radio set and a 2d stamp for reply. I heard him acknowledge the letter next morning over the air, but up till now have received no card. Latest loggings are: KGMB, Honolulu; KGU, Hawaii, and KSL, Salt Lake City. Is there an Australian station 2CO?—"Digger" (Hamilton).

[Yes. 2CO Corowa relays 3LO and 3AR. Power 7.5 kw. Wavelength 535.7 metres.—Ed.]

European Verifications.

BY the last English mail I received verifications from two Europeans, Rome, Italy, and Heilsberg, Germany. The latter station forwarded a book about the station, a list of 12S European stations, and two photos of the transmitting plant. According to a letter from WBOQ, it operates with a power of 50 k.w. and is the key station of the Columbia Broadcasting system in New York. WBOQ is now on the air with the call letters WABC from 7.30 a.m. until 2 a.m. the following morning, E.S.T. 4ZL, Dunedin, has been on the air again these last two nights.—DX84OC (Dunedin).

VK7BC.

THE following particulars of station VK7BC are taken from a verification as R. Bruce and C. Craw, 56 Mount Street, Burnie, Tasmania—frequency 1200 k.c., power of 10 watts, input.

They appeared pleased to receive my report and replied within three weeks. 2CO Corowa has been coming in at great strength lately, but is often spoiled by Morse. 3AK, Melbourne, has also been coming in at good strength lately on 1500 k.c. On some mornings they broadcast until after 4 a.m. The strength of KFI has fallen off lately, and it is a long time since I have had him above strength R6-7. KGO, on the other hand, has been coming at increased strength. The verification which DX78OC received from Colombo was very interesting, but can he not tell us on what frequency he received that station? The best "Ikko" stamps I have received from U.S.A. are from KMTR, Hollywood, and KMOX, St. Louis. These appear to be made of compressed copper or bronze. I recently received a verification from 2KO, Newcastle, after four months. Also received one from WBOQ, New York. I would like to know how many dxers have received verifications from

XEX, Mexico City? Compliments of the season to dxers.—N. Jenkins (Masterton).

The Black List.

I SEE by last week's "Radio Record" that DX21W has 3HA, Hamilton, on his black list. I sent 3HA a report two months ago and have had no reply so far. Also 3SH, Swan Hill, has not replied to two reports sent. I received a card last week from 1ZM, Manurewa, by return mail and 2ZM, Gisborne, sent a verification three months after. I sent my report on reception.—DX27OC (Dunedin).

A Heilsberg Letter.

BY the latest mail I received a verification from Heilsberg. The manager also sent a book of 62 pages dealing with his station, and a copy of the evening's programmes with the items I heard underlined. Everything is written in German. I enclose a copy of the verification. I will try and get some of the book translated so as to let dxers know something about Heilsberg.

Mr. R. J. Brown asks if anyone has a verification from KTM or WABC. I wrote to KTM over six months ago, but have received no answer. I also sent reports to WABC and WBOQ, and received a verification from the latter, but the former has not yet replied. Another station on my black list is WLAC0. I posted a report to that station on May 14.

By the latest American mail I received a verification from KGW after waiting some time. The reason why I was so long in receiving it was because it was sent back to KGW for additional postage. Words to this effect were stamped across the envelope.—DX73OC (E. J. Mullin), Oamaru.

The letter from Heilsberg reads:—"We thank you sincerely for your friendly letter of September 19, referring to the reception of our transmission from Heilsberg.

"Will you please look through the enclosed cutting of our programme for the days in question, in which we have marked with pencil the items you heard, showing that you actually heard our transmission.

"As requested, we send you a booklet of our Heilsberg station, which we trust will be of interest to you, and beg to remain etc., Ostmarken-Rundfunk A.-G."

Details of 4TO, Townsville.

THE following are particulars of station 4TO, Townsville, Queensland, taken from a verification card: Frequency, 1170 k.c.; power of 100 watts; operated by Amalgamated Wireless (A/sia.) Ltd. The slogan is: "The Gateway of Tropic Queensland."

I also received a letter from 2KO, Newcastle, which stated that when I heard the station it was operating a temporary service on a power of 25 watts.

My black list is: 3WR, Newcastle, 2KY, Sydney; 7LA, Launceston; 3SH, Swan Hill; and 3HA, Hamilton. Has any dxer received replies from any of these?—"Country Lad" (Gore).

Leipzig Heard.

I HAVE recently received a verification from "Leipzig," Germany, a translation of which appears below. I heard this station up till sunrise on and after last September 28.—C. V. Blucher (DX27A).

"We enjoyed receiving your letter and are pleased to know that you have picked up our broadcasting programme. We enclose a copy of this programme for your information. You will be interested that two other listeners in New Zealand have received our station at approximately the same time as you did. With best wishes for further success in radio.—Mitteldeutsche Rundfunk A.-G., Technische Betriebsstelle."

Useful Verification Data.

THE following extracts from verifications received recently by me may be of interest to dx and sw readers:—

From Radio Saigon: There are three stations in Saigon, Franco-Indochine—(1) F3-1CD, Cie Franco-Indochinoise de Radiophonie, 106 Boulevard Charner, Saifon. Station site, Chi-hoa, 6 kilometres from Saigon; aerial power, 12 k.w.; wave length, 49 metres; call, "Hello! Hello! Here is Radio Saigon." (General outline of station plant and equipment.) (2) FZR, the Government station, working on 24.91 metres. Telegraph and telephone connection with Paris and Japan. (3) A private broadcasting station working on 31.50 metres, aerial power 800 watts.

From the P. and T. Department, Bangkok, Siam: HSP-1 (Radio Bangkok) transmits daily on 350 metres 2½ k.w., except on Mondays, from 12.00 to 15.30 G.M.T. HSP-2 (Radio Bangkok), s.w. station. This station is now undergoing a series of tests on 41 metres, 2½ k.w., every Monday from 13.00 to 16.00 G.M.T. Both stations may be recognised by the distinctive call notes in the form of chimes of six notes up and down the scales of a gong at various intervals during programme. (Also further station plant particulars.)

From Japan: We have a chain system in this country in which 14 stations are included. Programmes are relayed to others and vice versa; as, for instance, JOAK to others and vice versa.

Increased Power for 2UW

ON Thursday, December 10, station 2UW, Sydney, 269m. (1110 k.c.) increased its power from 500 watts to 1500 watts. A special programme was broadcast to commemorate the event. Featuring on the programme were the famous New Zealand conductor-composer, Alfred Hill and the English humorists, John Henry and Blossom.

From Crosley Corp., Cincinnati, Ohio, U.S.A.: WLW, 700 k.c., 50,000 w.; WSAI, 1330 k.c., 500 w.; owned and operated by Crosley Radio Corp. "You might not consider your individual comments important—but we do. When you have anything to suggest—how any detail can be improved—we want you to write us. We want our audience to know in advance that these comments are and will continue to be greatly appreciated. We are particularly pleased to receive reports from so far away as New Zealand."—Yours, etc., DX25W.

Publicity for New Zealand.

MR. SPENCE R. ELLIS, of Okato Taranaki, ex-president of the DX Club, has forwarded the following two interesting paragraphs taken from American papers. The first, captioned "CJOR Heard in New Zealand," runs:

"CJOR's recent increase in power and transmitter improvements has certainly made it a target for reception letters from all over the world. Following are the addresses of four letters extracted from one mail, Friday, October 9:—

Hubert D. Hunt, Alfred, New Zealand.

Edward Anderson, 27 Shortland Street, Caversham, Dunedin, New Zealand.

Spence R. Ellis, vice-president New Zealand DX Club, Okato, Taranaki, New Zealand.

Frank Barnett, Broadcasting Station 4ZO, Lower Octagon, Dunedin, New Zealand.

All letters contained a wealth of information proving conclusively they were authentic. One had heard the Lido Cafe programme, and mentioned such minute details as 'phone numbers, addresses, names, etc. Two others had heard Mart Kenny's orchestra from the Alexandra Ballroom, and commented on them concluding their programme with "God Save the King."

The other is a discussion of a radio problem which has recently arisen in the States, and which, it is reported appears likely to cause international complications:—

"A new fly has appeared in the radio ointment, so to speak. Ambitious United States broadcasters, refused channels in the States, are building their transmitters just across the border in Mexico and pirating Canadian and United States waves. The worst offender is XER, a station with its studios in Texas and its transmitter just across the Rio Grande, at Della Acuna, Mexico, according to the announcement which I heard the station making on two occasions last week. This station comes through to Toronto with all the field intensity of a local station; and no wonder, for the announcer stated that they were using 75,000 watts power, which is 25,000 watts higher than any other station on the continent is using at the present time. The station registered on my supers at a point midway between WSB, Atlanta, Georgia, and CKAC, Montreal, and its sidebands interfered with the broadcasts of both CKAC and WSB. As a matter of fact, XER has brazenly seated itself in a channel that leaves only five kilocycles separation between it and WSB on the one side and five kilocycles between it and CKAC on the other. With its high power it is not only pirating parts of both waves but actually is wrecking the broadcasts of CKAC and WSB, both of which are popular stations with Canadian and United States listeners.

"Later investigation brings information that the station XER was built by a Dr. John R. Binkley, a medico-broadcaster and former politician of Kansas, who, having failed to get a channel in United States, hit on the idea of building his transmitter in Mexico.

(Concluded on page 29.)

The Technical Editor will, through these columns, be pleased to help readers experiencing trouble with their sets. Queries are limited to three—for more than this a shilling fee is charged, and a similar fee is payable for queries answered by post. Supplying layouts, circuits and solutions of intricate theoretical problems is beyond the scope of this service.

A coupon must accompany all requests for information. Non-appearance of the coupon in any issue cannot be regarded as a reason for its not being used.

Address all queries, The Technical Editor, Box 1032, Wellington.

C. G. McC. (Otira).—H.T.4 is designed for a special circuit utilising the centre tap of the rectifier. The maximum voltage it will rectify is 180 volts 30 mamps. One end of the secondary of the transformer is connected with the centre tap, and the other end is connected to the mid point of a two 4 mfd. condensers connected in series. The other end of these condensers are connected to the two remaining terminals on the rectifier, and then become "B+" and "B–," and go to the smoothing apparatus.

8 O'CLOCK (Petone).—When I disconnect the earth why is it the volume increases considerably?

A.: Because you are operating the set nearer the oscillation point, and consequently get greater strength. This happens in some cases, but not in all.

2. How can I neutralise my set?

A.: There are four neutralising condensers, and these must be adjusted, starting with the one nearest the detector until the set is perfectly stable. We do not advise you, however, to carry out this job yourself. To do it thoroughly requires an oscillator and extensive technical knowledge. While neutralisation is an easy thing to do in a battery set, yet, with the modern a.c. set it is not so easy, and you might throw your set right out of balance. However, if you can find those neutralising condensers you can adjust them until you stabilise your set.

G. L. (Inglewood).—Would it be satisfactory to hook up my present audio amplifier, consisting of one stage of 201A followed by two 245's in pushpull to the detector of the Super Six?

A.: It would be quite satisfactory to do so. You should get good results. You should also be able to use a fair number of parts from the B.D. in the Super Six. It would not be possible to "convert" in the normal sense the BD. to the Super Six, but you could pull it to pieces and use the parts.

RED BIRD (Wellington): You can use the valves mentioned quite well in your set. They are identical with the ones at present in use. We can see no reason why the 280 burned out your line voltage regulator. Are you quite certain you put it in the right way, and did not force it in with the filament where the plate and grid should be? It seems that some accident happened rather than that it was a characteristic of the valve which caused the trouble. As a matter of fact, we have interchanged the valves in our experiments many times without detrimental effect.

KNOCKER (Westport): What are the specifications for a short-wave frame antenna for the Super Six?

A.: We shall publish them next week if possible.

2. The valves you mention are quite suitable for the circuit. For the last stage you can use almost any power valve you wish to. It all depends on how much voltage and current you have available. The merit of the Super Six lies in the pre-audio stages, and you can please yourself about the power valve.

3. Would two balancing condensers in parallel with tuning condensers be a help in short-wave reception?

A.: Probably.

J. T. (Wellington): We cannot promise definitely when the a.c. version of the "Night Hawk Two" will appear.

2. What is the value of the resistance shown in the theoretical diagram of the a.c. version of the "Night Hawk," between the grid of the detector valve and the cathode of the same valve?

A.: It is a grid-leak of approximately 2 megs.

3. Would two power chokes of 20 and 40 henries approx. be suitable for smoothing the h.t. output from a 50 watts transformer?

A.: Yes, they should be perfectly satisfactory.

R.A.S. (New Brighton): What type and make of valve would I use for the "Sparrow Hawk One," specially for short wave work?

A.: A415 type of valve is easily the best for this particular socket.

2. I have a condenser with four fixed plates and three moving. What is its capacity?

A.: It all depends upon the size of the plates. If they are standard size (approximately the size of the ordinary .0005 and .00035) the capacity will be approximately .0001.

3. Could I use a dry "A" battery instead of a wet one?

A.: for one valve a dry "A" battery would be perfectly satisfactory.

S. G. (Auckland): We have not the faintest idea what your valves are. Your best plan would be to take them into a dealer and ask him to determine the characteristics of them. He could probably then tell you their equivalents.

2. It appears that the plug in coils are used for long-wave stations which are not heard in this part of the world. We cannot tell you very much regarding your third question, as the information given is far too vague. We need to see the circuit to tell you anything about it.

DIAMOND (Lyttelton): I have built the "Outspan Five," and am pleased with its performance, but I get a rushing sound as I increase the volume on distant stations.

A.: This is probably valve hiss due to the peculiarity of one particular valve. It would be hard to say which valve it is—probably the screen grid or the detector, and can be got rid of only by changing the valve.

2. I am using 4DX as detector, 415 first audio, and 403 as a last valve. Is that combination correct?

A.: Perfectly.

3. What grid bias should I put on B403?

A.: That depends upon the total voltage available. If it is 100—135 volts, you will need from 12½ to 15 volts bias.

SUPER (Stratford): Will it be satisfactory if I add a stage of pushpull to my Super Six?—Yes.

2. Would two .00035 variable condensers do in place of .0005?

A.: No; you must use a .0005 to match the special coils recommended. If you use a .00035 you will not be able to cover the band. However, it will be worth while trying the .00035, and if they are not satisfactory, change over to .0005.

3. Using the "B" eliminator, would it be better to leave out the snaghetti resistances in the set, bringing the leads to difference voltage taps on the eliminator?

A.: It will be possible to do so, although the best plan would be to construct the set exactly as described. Particularly with super-hets, it is not safe to make alterations and additions.

DX00A (Remuera).—I have a 10-valve super het. Should not the multimu

valves in this set counteract the intense fading of 2YA?

A.: No. Multimu valves are not designed to do that. You are thinking of automatic volume control. If your set were fitted with this, then it would, to a certain extent, counteract the fading.

2. During an item the tone will often change suddenly from base to treble without my touching any controls on the set. Why is this?

A.: There is something wrong with the audio side of your set. Quite possibly there is a fault in the tone control system, but it would not be possible to direct you to do it.

3. What would cause a sharp metallic click in the speaker, particularly during an item or static?

A.: It is quite possible that the noise to which you refer is being picked up on the aerial, and it is due to outside interference over which you have no control.

Replies by Mail.

We regret that owing to the intervention of the holidays, many replies by post are temporarily held over. They will be dealt with, however, as soon as possible.

Such troubles as two and three are very difficult to locate by correspondence; you would need to make a systematic search of your set.

R.H.R. (Lower Hutt).—See our reply to a previous correspondent concerning the loop antenna for the Super Six.

2. Can I tap the present broadcast loop for shortwave work?

A.: No; it would not be satisfactory.

N.D.B. (Tolaga Bay).—Will the coils for the s.c. "Cathode" super be the same as the Super Six, and will they be capable of being home constructed?

A.: They are quite capable of being home-constructed. They are entirely different from the Super Six coils.

2. Will the "Cathode" super be adaptable for battery use?

A.: It can be changed over the battery quite simply.

OSCILLATOR (Thames): Could you supply a reliable book describing fully the super heterodyne circuit?

A.: We advise you to write to Te Aro Book Depot, Wellington, who have quite a large supply of books that could help you. Bangay in "The Principles of Wireless Telephony and Telegraphy" gives a very good chapter on the super het., but it is an expensive book, and contains many subjects other than super hets.

KIT SET 3 (Dunedin): Could you describe 600 metres coils for my commercially-made set?

A.: We cannot undertake to design coils such as this, but if you add half as many turns again to the existing numbers, you will probably be somewhere near the mark, and this will give you a jumping off point from which you could make any adjustments you wish. Your circuit is not really designed for all wave work, so we are not surprised that you cannot get good results on the 80-metre coil. A balancing condenser in the aerial may possibly help you.

H.H.M. (Southland): I have constructed the Differential One with a fixed condenser between the plate and reaction coil, but when I put the aerial on and turn on the set, there is a loud hum and frying noise. How should I remedy this?

A.: Follow the instructions which appeared with the set, and do not make unnecessary alterations such as you have done.

NEW CHUM (Christchurch): Your aerial will be better with the lead in running straight down to the set. Generally speaking the total length of your aerial should be 100 feet, including the lead in. The poles are not too high, but it would be better if you could get the shorter one still higher.

R.H.B. (Auckland): Can the audio valve obtain current from the same winding as the detector and radio frequency valves?

A.: Yes; providing, of course, you are not overloading the transformer.

2. What condensers should shunt the bias resistance?

A.: From .25 to 1. mfd. Your valves are correct.

Radcord Crystal Set

Constructor's Results

"CURIEUX" (Napier) writes: I have built the "Radcord" crystal set into a copper cabinet, and have had good results. Each evening 2YA, Wellington, comes in softly but clearly enough to recognise tunes. The list of stations heard numbers six, the five others being: 2ZH, Napier, 100 watts; 2ZB, Napier, 7 watts, a harmonic of short-wave amateur station; ZL2FG, Napier; and 2ZI and 2ZL, Hastings. The two latter are about 11 miles distant by air, and have a power of somewhere between 12 and 14 watts. My aerial is 40 feet high at the far end and about 22 feet at the lead-in end, the main span being about 30 feet, and the earth consists of 3 5-foot pipes driven into the ground six feet apart.

The detector is a home-made one, fitted into the empty casing of an old semi-permanent detector. In the cup portion is fitted a piece of treated galena type crystal, and set in the head of the plunger rod is a sharp piece of metallic arsenic. I have had 2YA using crystal and catswhisker, but not quite as well as when using the above detector.

The Advance Short-Wave Set

(To the Editor.)

I AM pleased with the results obtained with the Advance A.C. short-wave set. I have constructed several battery models with and without S.G. valves in the past, but none have given the satisfaction the Advance is giving. The power supply is from a power-pack designed for about 100 mils at 250 volts, and is much bigger than necessary. Voltage is regulated by Resistograd, the 8000 ohm resistance being eliminated. There is absolutely no hum from the "B" supply, and no tuneable hum, although the 1 m.f.d. condensers by passing the filaments were not used.

The push-pull stage was eliminated, so the receiver is only 12 inches long instead of 18 inches. The output of the first audio is, however, fed into the pick-up jack on my Loftin Four for loudspeaker work. It was here a little difficulty occurred. A 1:5 transformer was used for the coupling—result, hopeless distortion and terrific hum from the speaker. A 3½:1 transformer was then tried, but results were no better. The step-up transformer was then replaced with a 1:1 output transformer, and this proved to be entirely satisfactory. Whether the amplification is too great with the step-up coupling I do not know, but it would appear so. The gain with the present arrangement is quite sufficient, all the main American stations coming in with the volume of 2YA when conditions are good.—I. McMillan (Christchurch).

A "Pencil" Resistance

A MOST useful resistance for many purposes can be made out of an ordinary lead pencil, which should preferably be of the 2H grade.

Sharpen the pencil at both ends, and then at each end make an electrical connection by wrapping the lead points with several turns of fine bare wire. Afterwards a layer of silver paper may be placed over the turns of bare wire, and then, over the tinfoil layer, a few turns of heavier wire may be wound on and retained permanently and securely in position by means of a spot or two of liquid glue. A pencil got up in this manner has a resistance of something like 300 ohms—the harder the pencil, of course, the higher being the resistance.

In testing out delicate instruments, voltmeters, ammeters, and so on, it is a very handy little device. Attached to a "B" battery, also, it will act as a safeguarding resistance, enabling the current for the valves to flow freely, but absorbing the heavy flow of current which would take place in the event of any accidental short-circuiting of the battery.

Making Aerial Joins

IT is sometimes necessary to make a joint in the aerial wire, either because the latter has broken, or perhaps, more frequently, in order to extend the length of the aerial. This latter requirement often crops up when temporary aerials are slung between trees for out-of-doors radio working. The following will suggest a very ready method of effecting an efficient joint in a length of aerial wire.

A short length (up to six inches) of narrow bore copper or lead tubing is necessary. A portion of the casing of a length of lead-covered wire makes an excellent article for this job. Lay the ends of the aerial wires to be joined parallel with each other and slip the short length of copper or lead tubing over them. Flatten the tube, and then, by means of a pair of pliers, twist both ends of the tube a few times.

The resulting joint will be mechanically strong and electrically efficient. Indeed, if the ends of the twisted tube are carefully stopped up with Chatterton's compound, or some similar substance, in order to prevent the access of air and moisture, the joint will be to all intents and purposes quite permanent in its efficiency.

Tips and Jottings

AS semi-variable condensers are not usually intended to withstand high voltages, it is not wise to place them between filament and plate, or where the full voltage of the battery will be impressed upon them.

WHEN using a semi-variable condenser in the output circuit, or where it may be called upon to withstand a considerable voltage, it is a good precaution to introduce a large fixed condenser in series with it.

WHEN taking readings with a voltmeter, remember that the instrument will take some current whilst the reading is being made, and only a high resistance voltmeter can give an approximately accurate reading.

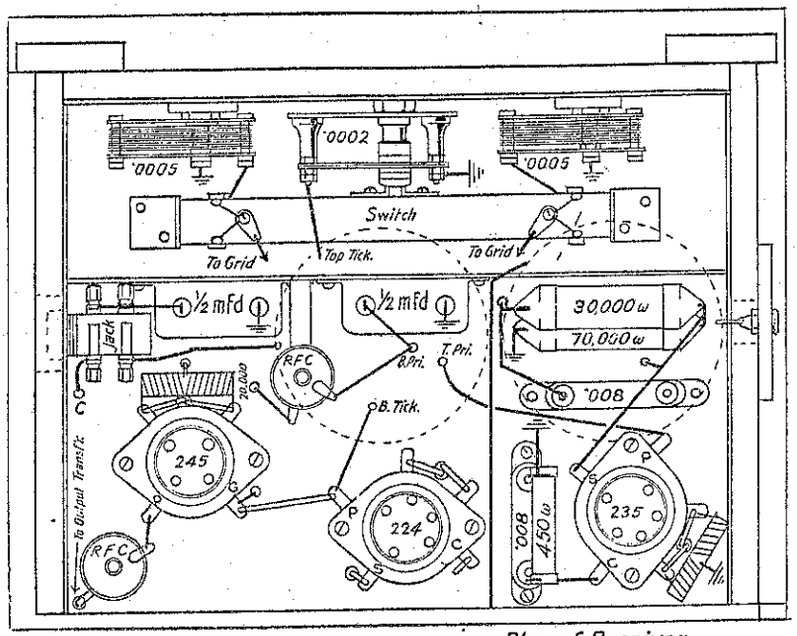
A GOOD rough-and-ready test if the insulation of a large condenser is to charge it from a battery and then stand it aside over night, and in the morning see if a spark can be obtained by touching the terminals. If so the condenser is O.K.

AFTER cutting three-ply wood it generally has rather splintery edges, and the simplest and neatest way to round these off is to lay a fairly large piece of coarse sandpaper flat on the bench and rub the wood along this, so cleaning up the edges.

The "Presto" Change-over Local Receiver

By "Megohm"

(Continued from last week.)



Plan of Receiver

The Radio-Frequency Stage.

THE tuning-coils consist of an aerial primary of about 35 turns of 32 enamelled wire, and a secondary of 2in. diameter 2¾in. high, of 75 turns of 24 d.s.c. wire. The primary is wound upon a former to slip inside the secondary, the winding being at the lower or earth end of the secondary. The lower end of each coil is earthed. The number of primary turns may be altered to suit conditions—more turns increases volume and decreases selectivity, and this applies to the detector primary also.

The screen for the coils may be a 3in tin canister reduced to 3½in in height. This may be secured to the side of the cabinet by a screw, near the top of the can, with a washer between can and aluminium to give clearance for the lid. The lead-in for the aerial is a piece of 18 s.w.g. bare wire secured to the inside of the aerial socket and projecting through a hole in the can, where the top of the primary is soldered to it.

The 2in secondary former is cemented to a piece of celluloid, and through a hole in the centre of this and the bottom of can, a bolt is passed to hold the coil in position.

The 235 valve assists selectivity, and can handle without distortion a signal of about 20 times the voltage permissible with the 224. The maximum plate voltage is 250, and the bias minus 3 volts. By employing a variable wire wound resistance of 20,000 ohms in the cathode lead, the bias may be varied from 3 to 50 volts, at which latter figure practically no signal will be heard, so that a good method of volume control is thus provided. This idea could not be very conveniently used in this receiver because of the change-over switching, which requires a separate control for each of the two stations.

In this stage are placed the screen voltage resistors and by-pass condenser, and alongside the valve is the bias resistor, with its by-pass condenser.

The screen between this and the detector stage may be of aluminium or copper—it butts close against the coil can, and at the lower front end is flanged to bolt to the upright flange on sub-base. At the back edge a similar ½in flange permits of bolting to the back plate. This partition should be cut to shape high, and when in position can be marked by means of a straight-edge, taken out, and cut to meet the top cover. The bottom edge is flanged on the detector side to bolt to the sub-base.

The Detector Stage.

THE coils for this stage are housed in a similar can to that used for the detector stage. An aluminium bracket holds the can at its proper height, and close against the partition.

The secondary coil is wound on a 2in. former 2¾ high, and comprises 75 turns of 24 d.s.c. The primary is wound upon a former 1¾in. diameter, the lower end commencing level with the lower end of the secondary. About 58 turns of 36-gauge enamelled close wound will suit for the primary, but a few more turns, say 10 or 12, may be added if selectivity is not highly important. Now we have an idea that is incorporated in some of the midget receivers. It consists in placing the primary winding at the filament end of the secondary, with the exception of one turn, which is placed at the grid end. This enables a slight gain in volume to be obtained without introducing instability.

The tickler is wound on a former 1 ¾in. in diameter, its lower end level with the lower or filament end of the secondary. Probably 40 turns of 36-gauge enamelled will be found sufficient. If oscillation occurs on low wave-lengths before the reaction condenser plates are half in, reduce the number of turns.

Odd sized formers to fit inside the secondaries may easily be made of "manilla" (folder) paper and seccotine. Wrap about four turns round a bottle of suitable size, take off, and shellac. Replace on the bottle when winding.

The tickler coil goes inside the primary. The bottom connects to the 224 plate, and the top to the reaction condenser stator.

Associated with this stage are the r.f. choke and .5 mfd. by-pass condenser, both bolted to the upright flange. The choke used is a commercial one, with metal bracket ready attached. Near the end of the flange another .5 mfd. condenser is placed. This is the condenser between filament end of the secondary coil and earth. If a pickup jack is required, it is placed just above this end of the flange, a suitable-sized hole, say, 1in. diameter, being bored in the wooden side. The jack, insulated type, is then secured in a hole through the aluminium lining.

A wire runs across from the detector plate to the 245 grid and to the lower end of tickler through bottom of can.

The Output Valve.

A FOUR-PRONG socket is provided for the 245 valve, and across its filament a 20-ohm balancer is placed. From the centre-tap of this the high tension current is drawn to point A, the beginning of the wire-resistance chain. Alongside the valve socket is an r.f. choke to which comes the current from the primary of the output transformer in the base, continuing to the 245 plate. A lead from the grid connection runs to the .5 meg. resistor.

Gear Under Sub-base.

UNDER the sub-base is a 15,000 ohm voltage divider, of which part is used as a main resistor, the carrying capacity of the winding, 40 m.a., being very suitable. The two .25 meg and one .5 meg resistors, a 2-meg. two wire-wound resistors, and four by-pass condensers, complete the list.

A strip of tin 1¾in. wide is bolted on to fill in the space at the front of the sub-base. The screws holding the .5 mfd condensers and partition will also hold this. Tin is used because it can be soldered to.

A diagram of connections is shown with the components in miniature, so that the leads are clearly shown, but actually there is little room to spare

where all the components are in place. Where possible, secure them to bolts used for the valve sockets, partition, etc. Condensers next to the tin strip may be soldered to it.

In order to save space, it is a good plan to turn round the legs of the voltage divider. When this is done, the central screw rod is inclined to be short, but if ¼in. of the Pirtoid tube is sawn off, reassembly is easy.

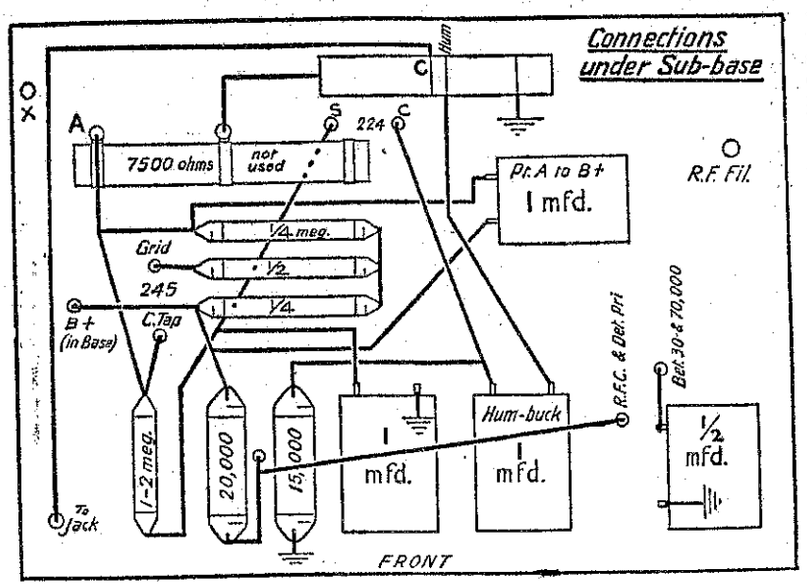
A few counter-sunk headed screws will be required for positions where the head is required to be flush, as, for instance, under valve-sockets.

Exactly half of the voltage-divider is to be used, so place one of the movable clips exactly in the centre—this will connect to the hum-bucking resistor, and one end is point A shown on the theoretical diagram. It would be possible to divide up a further portion of the voltage divider for the hum-bucking portion, but a trial showed that a separate resistor would answer better. The idea is to fix the hum-bucking point permanently, and stow the fixed resistor away under the sub-base, thus saving the space of a potentiometer.

A high-voltage dynamic speaker field may be supplied by including it as resistance, deducting its resistance in ohms from the 7500 ohms on the voltage-divider, on which 7 millimetres represents 1000 ohms, and 3.5 cm. exactly 5000 ohms. If necessary, the resistance as far as the hum-buck connection may also be taken out, and, in fact, with the extra smoothing introduced by the field, there is little hum left to work on.

The Hum-bucking Resistor.

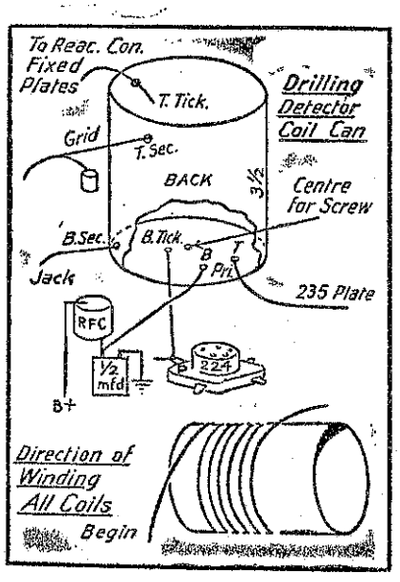
THIS resistor should be of the flat type, 650 ohms, or up to, say, 700 ohms. If such cannot be procured, the constructor can easily made one by winding on a stiff strip of mica about ¾in. wide and length 3 inches or so to suit, sufficient turns of enamelled resistance wire to make about 650 ohms. The gauge should not be larger than 38 s.w.g. Clean off one edge and fasten on a board as shown in the diagram. Cut three strips of 20 hard brass 2in. long, tapered and screw to board about in the position shown



not too tightly, so that they may be moved over the edge of the resistance. Wires from the receiver are connected as shown to solder-tags under the screws. Move the arms to various positions.

It will be found that moving the hum-buck connection well to the left produces a loud hum, and it will also be found that the hum-buck and point C must be fairly close together for good results, with not too great a resistance between point C and earth.

In the laboratory model best results were obtained with 200, 10 and 414



ohms, as shown on the diagram, though these must only be taken as a guide because they may not work out for another receiver. If moving the hum-buck arm does not get rid of the excessive hum, move the central clip on the voltage-divider about 1-8inch to include a little more resistance.

Mark correct positions on the resistor with white ink or other medium, take off board, and twist two turns of cleaned 32's round each position, soldering a thin rubber flex lead to the twisted end of each. Lay a piece of mica on each side of the resistor, and cover with tape from end to end, when it may be stowed away under the r.f. valve. The leads to the resistor will have been reduced in length after experimenting.

If soldering of resistance wire is necessary, use "killed" acid as flux, because resin is often unsuccessful.

Gear in Cabinet Base.

THE smoothing condensers, 1mfd., 2mfd. and 4mfd., and the output transformer are the only components.

The "in primary" of the output transformer is connected to the high voltage side of the 4mfd. condenser, while the "out primary" is connected by a shielded wire through the power-pack compartment to the r.f. choke and 245 plate.

The secondary of the output transformer connects to two terminals on an ebonite strip outside the base. A third terminal is for earthing, and connects internally with the B— wiring and shielding. An 18-gauge wire should run from this terminal up through the power-pack and connect to a solder-tag under the right-hand leg bolt of the sub-base. See that all parts of the shielding are properly earthed.

Run the secondary centre-tap connection of the power transformer direct to the earthing wire. Earth cores by tucking between one bolt and the core, a bundle of tinfoil containing the end of a thin wire, the other end of which is to be earthed. All shellac should be scraped off the core laminations of choke and transformer where the tinfoil is to contact. The earth contact must be made only at one point on any core.

The general plan to be followed in assembling the receiver proper is to first enamel the front panel, then fit components on it, with the reaction condenser in centre.

The sub-base components and partition are then bolted in place, and wired up as much as possible without the coils. Next, the sub-base is supported in an inverted position and the components are fitted underneath in the positions shown. It is often advantageous to solder a tag to a condenser case so that it may be secured to a neighbouring bolt. The Ferranti and other resistors are assembled without holders in order to save space. The writer first soldered a lead to each end of the Ferranti's, half-way up the slope of the cone at each end, then wrapped each in adhesive tape, covered each with a cylinder of copper foil, and soldered the two cylinders together, and the ends of these to the tin strip. Needless to say, condensers must be of high test and small bulk, so a new type, 1mfd., 1000 test, and only 5-8in. thick suit admirably.

The two .25 meg. and one ½ meg. resistors should be of the substantial composition type. These are all connected together at one end by a short piece of bare wire, leads of suitable length are connected to the opposite end of each, and then each one is covered with adhesive tape. All three can then be laid together, and taped into one bundle, effecting a great saving of space. There is room to use an ordinary holder for the 2 meg.

See that the shelf is drilled in suitable positions for the twisted filament leads, and full B positive, and B positive from output transformer primary. All the above-mentioned leads should

(Concluded on page 27.)

Feature Peeps At Future Programmes

SUNDAY

1YA Selections

THE church service will be relayed from the St. Matthew's Church, the preacher being the Rev. C. H. Grant-Cowen and the organist and choir master Mr. J. H. Philpott. At approximately 8.30 p.m. there will be a relay of the Municipal Band concert from Albert Park, George Buckley conducting. The programme will be entirely instrumental in character.

At 2YA

To-night's programme will be unique in that for the first time Naomi Whalley, New Zealand's finest soprano, and William Watters, baritone, will appear before the microphone. Both these artists, who, incidentally, have frequently appeared in high class musical entertainments throughout the country, are being brought especially from Palmerston and Wanganui to fulfil the engagement. Excerpts from the "Elijah," "Madam Butterfly," "The Creation" and "Aida" will be included in their numbers. This is a programme that no 2YA listener should miss.

From Christchurch

THE church service will be that of the St. Albans Methodist Church, Rugby Street, the preacher, Rev. E. B. Chambers, organist Miss Clarice Bell, and the choirmaster, Mr. W. Simpson. At approximately 8.15 a concert featuring well-known 3YA artists will be broadcast from the studio. The Salon Orchestra, under Francis Drake, will provide the instrumental music. H. G. Glaysher, the well-known harpist, will play two numbers, and Addie Campbell, soprano, will be heard in three numbers including "Solveig's Song" (Greig).

From 4YA

THE evening service from the Knox Presbyterian Church will be relayed, the preacher being the Rev. D. C. Herron. Following the church service a relay of the concert programme from 3YA will take place.

MONDAY

Jottings from 2YA

SEVERAL outstanding artists appear on the programme to-night. Mrs. Frank Tunley, soprano, is one of Wellington's most brilliant soloists. She has performed on many notable occasions, and to-night listeners are to hear her for the first time. Included in her numbers is the beautiful "Ave Maria" (by Bach-Gounod), with violin obbligato.

Another outstanding soloist is Hilda Chudley, who has often been heard from the Wellington concert platform. Miss Chudley has been heard from 2YA, but certainly not often enough, and her appearance to-night will be a welcome one.

The tenor, D. L. Irwin, well-known to 2YA listeners, will render several delightful numbers, including a bracket with a 'cello obbligato played by George Ellwood.

Mary Cooley, whose dramatic rendition of "The Lady and the Tiger" has evoked considerable appreciation, will come on to-night as "The Storyteller."

On the instrumental side there will be the 2YA Orchestrina, a piano and 'cello item by George Ellwood and Gordon Short, a group of 'cello solos by George Ellwood, and a programme of

FRANCES HAMERTON,
a Christchurch soprano, who will next broadcast from Christchurch on Thursday.
—Steffano Webb, photo.

dance music from the Adelphi Cabaret, interspersed with recordings from the studio.

Notes from Christchurch

DERRY'S MILITARY BAND and assisting artists will provide the programme at 3YA to-night.

Jottings from 4YA

TO-NIGHT'S programme will be of specially selected recordings. Some exceptionally fine numbers have been chosen, and included among the artists to be heard will be Heifetz, Galli-Curci, the Mayfair Orchestra, Benjamin Gigli, the Royal Opera House Orchestra, La Scala Chorus, Kreisler, Totti Dal Monte, the Flonzaley Quartet, and the State Opera House Orchestra.

TUESDAY

Auckland Notes

THE new 1YA Chamber Orchestra, under Harold Baxter, will provide the instrumental items for to-night. "Jolly Robbers," "Faust Ballet," "Tales of Hoffmann," and a selection of Sullivan's songs will be included on their programme. Kay Christie, contralto, Arthur H. Ripley, tenor, and Ernest and Wendy—novelty entertainers in "Bits and Pieces"—will support the Chamber Orchestra in a bright and varied programme.

From 2YA

SEVERAL selections will be played on the concert programme to-night by Cluny MacPherson and Claude Bennett on banjo and piano respectively. These artists are a fine combination, and, playing popular numbers, should be much appreciated by listeners.

2YA Salon Orchestra will provide instrumental music, supported on the vocal side by Ernest Short, baritone, and Ernest McKinley, tenor.

From Dunedin

MARGHARITA ZELANDA, the brilliant New Zealand coloratura soprano, assisted by Wilfred Kershaw, bass, Maitland McCutcheon, violinist, and Madame Martinelli Reggiardo, instrumental sextet, will provide what should be an outstanding performance from the station to-night.

Margharita Zelanda, who, as an artist of unusual brilliance, is known not only all over New Zealand, but abroad, will sing four delightful numbers, three of which are brackets. The instrumental sextet, also well known to 4YA listeners, will play Strauss's "Waltz Dream," "Romanza" (Klosi), and "Cupid's Awakening." Maitland McCutcheon, violinist, will be heard in several numbers, including Mozart's very bright "Rondo" and "Souvenir."

WEDNESDAY

Auckland Features

A MISCELLANEOUS programme will be presented from this station to-night, including at 8.42 a talk by Mr. Arthur Kerr on his experiences in Hitch-Hiking around the world. A talk such as this will be full of interesting little sidelights on places we rarely hear of, for it is part of the business of hiking to get off the beaten track.

The ever-popular xylophone and marimba duo—Reno and Arta—will provide several bright numbers,

FEATURETTES

Naomi Whalley, soprano, and William Watters, baritone
2YA, Sunday

Margharita Zelanda
4YA, Tuesday

The Minnesingers
4YA, Wednesday

Broadsiding Relay
1YA, Saturday

Wellington Items

THE specially recorded programme for to-night will be interrupted at 9 p.m. to allow the lecture by Dr. Guy Scholefield, O.B.E., being broadcast.

Jottings from 3YA

A MISCELLANEOUS programme will be presented from the station to-night.

Notes from Dunedin

THE Minnesingers and orchestra, under the conductorship of John P. Leech, will provide a programme from the studio to-night. Outstanding among the vocal items will be bass (T. D. White) and chorus—"The Yeoman of England," Ann White and John Leech in "A Night in Venice," a plantation song by Nellie Davidson, "Sweet Miss Mary," a vocal ensemble by the Minnesingers, "Robin Hood's Wedding," and a selection of cameos from the Woodforde-Finden Indian Love Lyrics, with annotations.

From 9.30 until 11 p.m. Dagg's Dance Band will entertain.

THURSDAY

1YA Items

THE 1YA Chamber Orchestra, under Harold Baxter, will again broadcast this evening. Assisting them will be well-known 1YA artists, including Stan Pritchard, baritone, Zante Wood, humorist, Aimee Clapham, contralto, and the Mounce Sisters in popular duets.

2YA Features

THE Wellington Municipal Tramways Band and assisting 2YA artists will provide to-night programme. Instrumental and vocal items will be provided by the Majestic Lounge Quintet, playing under the conductorship of Frank Crowther.

Notes from Christchurch

THE Studio Orchestra, under Harold Beck, will entertain this evening. They will be supported by popular 3YA artists, including Millicent Jennings, contralto, T. Robson, baritone, and Frances Hamerton, soprano.

FRIDAY
Selections from 1YA

AT 2 p.m. the station will be on the air to relay a resume of the Plunket Shield cricket match, Canterbury v. Auckland, at Eden Park.

Novelty items on the programme will be provided by the Watters Duo (saxophone and piano) and the Tollies (humorists). The Mati Trio (novelty instrumentalists) will be heard in several numbers.

Lee Fore Brace, that popular teller of sea stories, will be on the air at approximately 9 p.m. to relate another yarn, "The Hoodoo Ship."

2YA Selections

TWO popular brackets of to-night's programme should be the light baritone and piano solos by Dan Foley and Frank Crowther. These two artists are both well known not only to 2YA listeners, but to the Wellington public, with whom they have both earned a very just popularity. Included among their items will be "The Rose of Tralee" (Barry) and "The Little Old Church in the Valley" (Aletyne).

The 2YA Orchestrina, under Signor A. P. Truda, will provide instrumental music, their numbers including Strauss's beautiful "Waltz Dream," Elgar's famous "Salut D'Amour," and "Bunch of Roses" (Chapi).

Selections from 3YA

A VARIETY programme will be provided to-night, the studio orchestra, under the conductorship of Harold Beck, providing the instrumental items. A combination of violin and pianoforte (Norma and Margaret Middleton) will be heard in old English melodies, "Drink to Me Only," "Sally in Our Alley," "Home, Sweet Home," and "The Song is Ended" (Berlin). Cecily Audibert, the well-known Christchurch soprano, will broadcast several numbers.

4YA Notes

A VARIETY programme by the Melodists Quartet, assisted by W. J. Sinton, xylophonist, J. McGee, saxophonist, B. Brown, humorist, the Phillip Sisters, novelty entertainers, and Madam Reggiardo's Orchestra will be presented to-night.

The Melodists' numbers, "Early in the Morning" (Broughton), "Song of the May Morning" (McBurney), "Comin' Thro' the Rye," and "Mary Adair," will be provided.

NAOMI WHALLEY

A brilliant soprano, who has been heard from concert platforms throughout New Zealand, but who, on Sunday next, will broadcast for the first time.

Two Celebrated Vocalists

To Appear from 2YA Shortly

TWO of the most brilliant vocalists in New Zealand will feature on 2YA's programme on Sunday next. Known for their choral and concert work from Auckland to the Bluff, Naomi Whalley, soprano, and William Watters, baritone, have enviable reputations. Miss Whalley, who comes from Palmerston North, is a regular soloist with choral and other musical societies throughout New Zealand. Mr. Arthur Jordan, the English tenor, stated that hers was the finest soprano voice he had heard in the Dominion.

She has a full, rich voice of remarkably fine quality, with clear ringing top notes and fullness of tone in the lower register. Her easy, natural style convinces one that she is singing for the sheer joy of the art, while her clear enunciation and expressive phrasing enhance the inherent appeal of her numbers.

Mr. Watters's work in recitals, oratorios and other branches of his art has earned him the highest praise of critics. Possessed of a voice of great range, of rich tone in the lower register, and of purity and strength in the upper notes, Mr. Watters performs with all the finish of the artist, without affectations or mannerisms of any kind. It is indeed pleasurable to find a New Zealand-born artist who can rise to such heights.

This is the first occasion on which these two brilliant artists have broadcast, and listeners can look forward with pleasurable expectation to their appearance on January 3.

KAY CHRISTIE,
contralto, who will appear next from 1YA on Tuesday.
—S. P. Andrew photo.

SATURDAY
1YA Attractions

INNUMERABLE thrills should be provided listeners during the relay of a running description of the broadsiding from the Western Springs Stadium. That form of motor bicycle racing known as broadsiding is a sport which is gaining in popularity not only in New Zealand but all over the world, providing as it does a long series of thrilling moments. Broadcast descriptions, although they cannot provide all the thrills, will do much to bring home the atmosphere of the dirt track.

A varied popular programme has been provided for the evening, during which the Twa Macs, popular 1YA entertainers, will be heard in Scottish humour and song.

Gleanings from 2YA

THE Melody Four, well known as a vocal combination throughout New Zealand, will again be heard from the studio to-night. The vocal solos will be provided by the individual members of the quartet. The instrumental music will be provided by the 2YA Salon Orchestra, under the conductorship of Mat Dixon.

Jottings from 3YA

A VAUDEVILLE and dance programme will be provided from the studio to-night. The programme will be relayed to 4YA, Dunedin.

How Wireless Began

(Continued from page 2.)

In 1902 a distance of twenty miles was covered by E. Ruhmer; and then, in 1906, a real advance was achieved by Fessenden by employing for the first time a high frequency alternator which gave him a useful carrier wave of 20,000 cycles per second. This enabled him in the following year to transmit speech from Brant Rock to Jamaica, Long Island, a distance of about 200 miles.

It is interesting to note here the development in wireless telegraphy during this period. In December, 1901, by means of stations specially constructed for that purpose, I was able for the first time to transmit and receive telegraphic signals right across the Atlantic Ocean, from Poldhu in Cornwall to St. John's, Newfoundland, a distance of 1800 miles, thus discovering that really big distances were possible because the electrical waves would follow the earth's curvature round the globe. Early in 1902, during a voyage on the American liner Philadelphia to New York, I was able to receive signals from Poldhu for the whole distance at night time, although during the day the transmission range fell to 700 miles, thus discovering the now well-known fact that wireless signals transmitted by wavelengths of a few hundred metres can be received over much greater distance by night than during the hours of daylight.

My voyage to the United States on s.s. Lucania in the following year, during which news messages were received by wireless from Poldhu daily, is deserving of note because the results were so successful that a number of other ships were fitted with long-distance receiving apparatus, and a Wireless Broadcast News Message Service to liners was officially opened in 1904. This telegraphic news service has continued without a break up to the present time. The broadcasts from Poldhu during the War were, of course, of an official nature only, but the usual commercial service was resumed immediately after the War, Poldhu continued to send out the news until May, 1922,

(Concluded on page 30.)

Full Programmes for Next

Sunday, January 3

1YA, AUCKLAND (875 KILOCYCLES)—SUNDAY, JANUARY 3.

3.0 : Selected recordings and literary selection.
6.0 : Children's song service, conducted by Uncle Leo.
7.0 : Relay of service from St. Matthew's Church. Preacher: Rev. C. H. Grant-Cowen. Organist and choirmaster: Mr. J. H. Philpott.
8.30: Relay of Municipal Band concert from Albert Park. Conductor: Mr. George Buckley.
March—The Band, "Old Panama" (Alford).
Overture—The Band, "William Tell" (Rossini).
Cornet Duet—Messrs. F. Bowes and J. Davies, "Birds of the Forest."
Selection—The Band, 'M'ore Melodious Memories" (Finck).
Piccolo—Mr. Hal. C. McLennan, "Sparkling Dew Drops."
Selection—The Band, "The Gondoliers" (Sullivan).
Rhapsody—The Band, "Hungarian No. 2" (Liszt).
Hymn—The Band, "A Few More Years Shall Roll" (Bidgood).
March—The Band, "Martial Moments" (Winter).
10.0 : God save the King.

2YA, WELLINGTON (720 KILOCYCLES)—SUNDAY, JANUARY 3.

3.0 : Selected gramophone recordings.
6.0 : Children's song service, conducted by Uncle George, assisted by the children's choir from St. Aiden's Sunday School.
7.0 : Relay of service from the Salvation Army Citadel. Preacher: Lieutenant-Colonel Burton.
8.15 (approx.): Studio concert. Record—London Symphony Orchestra, Norwegian Dances: (1) "Allegro Marcato." (2) "Allegro Tranquillo," (3) "Allegro Moderato," (4) "Allegro Molto" (Grieg).
8.31: Baritone—Mr. William Watters (Wanganui), "Prologue from Pagliacci" (Leoncavallo).
8.36: Soprano—Miss Naomi Whalley (Palmerston North), (a) "Nursery Rhymes" (Pearl Curran); (b) "If My Songs Were Only Winged."
8.42: Record—Piano, Vladimir Horowitz, (a) "Capriccio in F. Minor"; (b) "Valse Oubilee."
8.50: Vocal Duet—Miss Naomi Whalley and Mr. William Watters, "Graceful Consort" (from "The Creation"—Haydn).
8.54: Record. Violin—Fritz Kreisler, "La Precieuse" (Couperin, arr. Kreisler); "Chanson Louis XIII."
9.0 : Weather report and station notices.
9.2 : Baritone—Mr. William Watters, "It is Enough" ("Elijah").
9.7 : Record. Instrumental—J. H. Squire, Octet, (a) "Amina"; (b) "Song of the Celeste."
9.13: Soprano—Miss Naomi Whalley, "One Fine Day" (from "Madame Butterfly"—Puccini).
9.17: Record. Instrumental—New Light Symphony Orchestra, Selection from "Princess Ida" (Gilbert and Sullivan).
9.25: Baritone—Mr. William Watters, (a) "On Away, Awake" (Cowen); (b) "To a Messenger" (La Forge).
9.31: Tenor—Michele Fleta, (a) "Aida" (Verdi); (b) "Favorita."
9.40: Soprano—Miss Naomi Whalley, "On Mighty Pens" (from "The Creation"—Haydn).
9.45: Record. Instrumental—Cedric Sharpe Sextet, (a) "Valse Bluette"; (b) "Les Tresors de Columbine" (Drigo).
9.51: Vocal Duet—Miss Naomi Whalley and Mr. William Watters, "On Wings of Song" (Mendelssohn).
9.55: Record. Instrumental—Edith Lorand's Orchestra, "Tales of Hoffmann" Selection (Offenbach).
God save the King.

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

3.0 : Gramophone recital.
4.30: Close down.
5.30: Children's song service by children of the Methodist Sunday School.
6.15: Chimes.
6.30: Relay of evening service from the St. Albans Methodist Church, Rugby Street. Preacher: Rev. E. B. Chambers. Organist: Miss Clarice Bell. Choirmaster: Mr. W. Simpson.
7.45: Selected recordings.
8.15: Approx. Studio programme. Record: Overture New Symphony Orchestra "In Memorium" (Sullivan).
8.18: Bass—Mr. T. D. Williams, "True is All Iago Says" (Hiawatha), (Coleridge-Taylor).
8.26: Harp—Mr. H. G. Glaysher, "Deux Morceaux" (Alfred Kastner).
8.32: Soprano—Miss Addie Campbell (a) "Only the River Running By" (Hopkins); (b) "Solveig's Song" (Greig).
8.37: Orchestral—Salon Orchestra (Conductor, Mr. Francis Bate). Carmen Suite: (a) "Prelude"; (b) "Arugonaise"; (c) "Intermezzo"; (d) "Les Dragons D'Alcara"; (e) "Les Toreadors". (Bizet, arr. Roberts).
8.49: Tenor—Mr. Ernest Rogers (a) "Serenade" (Schubert); (b) "All Hail Thou Dwelling" (Faust), (Gounod).
8.56: Violin solos—Record: Y. Dratza (a) "Serenade Basque" (Dunhill); (b) "Serenade Espagnole" (Chaminade-Kreisler).
9.2 : Record—Glasgow Orpheus Choir. "Great God of Love" (Pearsall).
9.5 : Weather report and station notices.
9.7 : Piano—Miss Bessie Pollard, with Salon Orchestra. "Concerto in G. Minor" (Saint Saens).
9.12: Bass—Mr. T. D. Williams (a) "Rage! Thou Angry Storm" (Benedict), (b) "I Heard Your Voice" (Forester); (c) "The Wanderer's Song" (Harrison).
9.32: Harp—Mr. H. G. Glaysher, "Sur le rive de le mer" (Upon the Seashore), (Aburthur).
9.38 Soprano—Miss Addie Campbell, Shadow Song "Ombra Leggiera" (Dinorah), (Meyerbeer).
9.45: Record—'Cello solo: G. Cassado "Apres un Reve" (Faure).
9.49: Tenor: Mr. Ernest Rogers (a) "Song of All the Ages" (Squire); (b) "To the Moon" (Voergi).
9.55: Record—Glasgow Orpheus Choir. "Dim Lit Woods" (Brahms).
9.58: Orchestral—Salon Orchestra: Three Arabian Dances (Montague Ring); (a) "Caravan"; (b) "By the Fountain"; (c) "The Bedouin."
10.8 : God Save the King.

4YA, DUNEDIN (650 KILOCYCLES)—SUNDAY JANUARY 3, 1932.

3.0 : Chimes. Selected recordings.
4.30: Close down.
5.30: Children's Song Service, conducted by Big Brother Bill.
6.15: Instrumental recordings.
6.30: Relay of evening service from Knox Presbyterian Church. Preacher: The Rev. Mr. D. C. Herron.
7.45: Selected recordings.
8.15: Relay of concert programme from 3YA.
10.0 : God Save the King.

2YB, NEW PLYMOUTH (1230 KILOCYCLES)—SUNDAY, JAN. 3, 1932.

7.30 to 8.15: Church relay.
8.15 to 10: Studio Concert.

Monday, January 4

1YA, AUCKLAND (875 KILOCYCLES)—MONDAY, JANUARY 4.

SILENT DAY.

2YA, WELLINGTON (720 KILOCYCLES)—MONDAY, JANUARY 4.

10.0 : Chimes.—Selected gramophone recordings.
11.12: Lecturette—"Cooking."
11.37: Lecturette "Health Hints or First Aid."
12.0 : Lunch-hour music. Resume of Plunket Shield cricket match.
2.0 : Selected recordings.
3.30 and 4.30: Sporting results.
5.0 : Children's hour, conducted by Uncle Jeff.
6.0 : Dinner session.
7.0 : News session.
7.40: Talk—Mr. Hays Towns, Representative of Institute of Opticians, "1932 Eyes."
8.0 : Record—Berlin State Opera House Orchestra, "Bartered Bride" overture (Smetana).
8.8 : Soprano—Mrs. Frank Tunley: (a) "Birds of Balmy Woodlands" (Wekeelin); (b) "Cradle Song" (Kreisler).
8.16: Piano and 'cello—Mr. Gordon Short and Mr. George Elwood, "Suite" (Handel).
8.29: Contralto—Miss Hilda Chudley, (a) "To People Who Have Gardens" (Kennedy Fraser); (b) "Through the Meadow" (MacDowell); (c) "In a Garden" (Hawley).
8.35: Selection—2YA Orchestrina (Conductor, Signor A. P. Truda) "Mignon" (Thomas).
8.45: Tenor—Mr. D. L. Irwin, with 'cello obligato by Mr. George Elwood: (a) "Tomorrow" (Strauss); (b) "Panis Angelicus" (Cesar Franck).
8.52: Record—Organ, Quentin M. MacLean, "Ballad Concert Memories."
9.0 : Weather report and station notices.
9.2 : 'Cello—Mr. George Ellwood: (a) "Minuetto" (Beethoven); (b) "Guitarre" (Moskowski); (c) "Orientale" (Cui); (d) "Spinning Song" (Dunkler).

Week-all Stations-to Jan. 10

9.14: Story-teller—Miss Mary Cooley, "The Face on the Wall" (E. V. Lucas).
9.19: Soprano—Mrs. Frank Tunley: (a) "Ave Maria" with violin obligato (Bach-Gounod); (b) "Husheen" (Alicia Needham).
9.25: 2YA Orchestrina: (a) "Consolation" (Liszt); (b) "Dance of the Hours" (Ponchelli).
9.35: Tenor—Mr. D. L. Irwin: (a) "The Lost Child" (Irish Folk Song (arr. Charles Wood); (b) "Heffie Cuckoo Fair" (Martin Shaw).
9.40: Record—St. Hilda Professional Band: "Faust—Soldier's Chorus" (Gounod, arr. Olliver); "William Tell—The Torrent Chorus" (Rossini, arr. Hawkins).
9.48: Contralto—Miss Hilda Chudley: (a) "Hindu Song" (Bemberg) ('cello obligato by Mr. George Elwood); (b) "Cradle Song" (Delins).
9.53: Grand Valse—2YA Orchestrina, "Soiree D'Ete." (Waldenfel).
10.0 : Programme of dance music from the Adelphi Cabaret, interspersed with recordings from the studio.
11.0 : God save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—MONDAY, JANUARY 4.

3.0 : Gramophone recital.
4.25: Sports results.
5.0 : Children's hour.
6.0 : Dinner session.
7.0 : News and market reports.
8.0 : Chimes. Programme by Derry's Military Band and assisting artists. Conductor: Mr. J. M. Scott.
March—Band, "My Temptation" (Polla). Waltz—Band, "Little Sweetheart of the Prairie" (Brown).
8.11: Bass—Mr. W. J. Richards, "The Riderless Steed" (Hussell).

8.15: Novelty piano—Miss Maisie Ottey, "Twinkles" (Jentes).
8.19: Record humour—Art Gilham, "Pretty Little Thing."
8.23: Humoresque—Band, "A Lightning Switch" (Alford).
8.33: Record—Vocal Gems, Light Opera Company, "Pink Lady."
8.37: Contralto—Miss Alice Vinsen, "Mine Enemy" (Rudd).
8.40: Instrumental—Christchurch Broadcasting Trio, "Noveletten" (Gade).
8.52: Record—Vocal Quartet, County Revellers, "In the Good Old Summertime.
8.56: Foxtrot—Band, "Ten Cents a Dance" (Rodgers).
9.1 : Weather report and station notices.
9.3 : Record—Orchestral, Jack Hylton's Orchestra, "Bitter Sweet."
9.11: Bass—Mr. W. J. Richards, (a) "The Curfew" (Monk Gould); (b) "Up From Somerset" (Sanderson).
9.18: Piano novelties—Miss Maisie Ottey, (a) "A Slippery Sam"; (b) "Bing Bing" (Mel. Kaufman).
9.24: Record—Humour, Clapham and Dwyer, "Buying a House."
9.30: March—Band, "Anchors Aweigh" (Zimmermann).
9.35: Record—Vocal Gems, Light Opera Company, "Balkan Princess."
9.39: Instrumental—Christchurch Broadcasting Trio, (a) "Chant D'Automne" (T. Schaikowski); (b) "Scherzo" (Reisseger).
9.48: Contralto—Miss Alice Vinsen, (a) "The Year That's Awa" (Scottish); (b) "A Song of Joy" (Del Riego).
9.53: Waltz—Band, "Viennese Nights" (arr. for Military Band by J. M. Scott).
10.2 : March—Band, "I'm Happy When I'm Hiking" (Tremain).
10.7 : God save the King.

4YA, DUNEDIN (650 KILOCYCLES)—MONDAY, JANUARY 4.

3.0 : Chimes. Selected recordings.
4.30: Sports results.
5.0 : Children's session, conducted by Big Brother Bill.
6.0 : Dinner music.
7.0 : News session.
8.0 : Chimes. Specially Selected Recorded Programme.
Overture—State Opera Orchestra, Berlin, "Oberon."
Soprano—Galli Curci, "Una Voce Poco Fa"; "Un Bel Dei."
Violin—Heifetz, "Nocturne," Op. 27, No. 2; "Rondo" in G Major.
Baritone—Peter Dawson, "Fiddler of Dooney" (Dunhill); "Song of the Highway" (May).
Orchestral—Mayfair Orchestra. Selection, "Maid of the Mountains."
Male chorus with orchestra—"Jolly Good Fellows Everyone."
Orchestra—Selection, "Rose Marie" (Friml).
Tenor—Beniamino Gigli, "Tombe degli avi"; "Tu che, a dio."
Weather report and station notices.
Overture—Royal Opera Orchestra, "Scheherazade," Parts 1 and 2.
Choral—Principals and full chorus of La Scala, Milan, "Ah! Day For Ever Remembered"; "Still Here? What Are You Doing."
Violin—Fritz Kreisler, "Deep In My Heart" from "The Student Prince."
Humour—"John Henry's Tiger," Parts 1 and 2.
Medley—New Mayfair Orchestra, "A Musical Comedy Switch."
Soprano—Toti dal Monte, "Convien Partir."
Instrumental quartet—Flonzaley Quartet, "Quartet in D Flat Major."
Soprano—Elsie Suddoby, "The Almond Tree" (Schumann).
Orchestra—Ferdy Kauffmann's Orchestra, "Danube Legends" (Fucik); "Danube Waves" (Ivanovici).

2YB, NEW PLYMOUTH (1230 KILOCYCLES)—MONDAY, JANUARY 4.

7.30 to 8.0: News and information.
8.0 to 10.0: Studio concert.

Tuesday, January 5

1YA, AUCKLAND (875 KILOCYCLES)—TUESDAY, JANUARY 5.

2.0 : Relay of resumes of the Plunket Shield cricket match—Otago v. Auckland—at Eden Park.
5.0 : Children's session, conducted by Uncle Dave.
6.0 : Dinner session.
7.0 : News and market reports.
7.40: W.E.A. session.
8.0 : Chimes. March—1YA Chamber Orchestra (Conductor, Mr. Harold Baxter), "The Major" (Alford). Overture, "Jolly Robbers."
8.11: Contralto—Miss Kay Christie: (a) "Love Was Once a Little Boy" (Fisher); (b) "A Fairy Went a-Marketing" (Carew).
8.17: Novelty Entertainment—Ernest and Wendy, "Bits and Pieces."
8.27: Selection—1YA Chamber Orchestra, "Faust Ballet," Nos. 1, 2, 3, 4.
8.37: Tenor—Mr. Arthur H. Ripley: (a) "Mignon" (Thomas); (b) "Spirit Flower" (Tipton).

8.43: Selection—1YA Chamber Orchestra, "Tales of Hoffman" (Offenbach).
8.56: Contralto—Miss Kay Christie: (a) "Cupid at the Ferry" (German); (b) "Sunbeams" (Landon Ronald).
9.0 : Weather report and station notices.
9.2 : Selection—1YA Chamber Orchestra, "Sullivan's Songs—pt. 1."
9.8 : Novelty Entertainment—Ernest and Wendy, "Bits and Pieces."
9.18: Tenor—Mr. Arthur Ripley, "Ah, Moon, of My Delight," from "Persian Garden" (Lehmann).
9.22: Selection—1YA Chamber Orchestra, "Sullivan's Songs—pt. 2."
9.28: Programme of Recorded Classical Gems: Instrumental Trio—Yelly D'Aranyi, Felix Salmond and Myra Hess, "Rondo from Trio in B Flat" (Schubert).
Soprano—Meta Seinemeyer, "The Night" (Rubinstein).
Instrumental Quartet—Lener String Quartet, "Quartet in D Major—Menuetto" (Haydn).
Piano—Emil von Sauer, "The Musical Box" (von Sauer).
Choral—The Sieber Choir, "The Mill in the Black Forest" (Eilenberg).
Orchestral—London Symphony Orchestra, "Huldigungs March."
10.0 : God save the King.

2YA, WELLINGTON (720 KILOCYCLES)—TUESDAY, JANUARY 5.

10.0 : Chimes. Selected gramophone recordings.
11.12: Lecturette—"Fabrics and Fashions."
12.0 : Lunch-hour music. Resume of Plunket Shield cricket match.
2.0 : Selected recordings.
3.30 and 4.30: Sporting results.
5.0 : Children's hour. Conducted by Jumbo.
6.0 : Dinner session.
7.0 : News session.
7.40: Lecturette by a Representative of the Agricultural Department. "For the Man on the Land."
8.0 : Chimes. Record—Parlophone Military Band, "Steadfast and True" (Tieke); "The Singing Lesson."
8.8 : Baritone—Mr. Ernest Short, (a) "On the Road to Tipperary" (O'Hara); (b) "The Old Trombone" (Grain).
8.14: 2YA Salon Orchestra (Conductor, Mr. M. T. Dixon), "A Gypsy Princess" (Kalman).
8.24: Record—Humour, Gracie Fields, (a) "Sally"; (b) "Follow In and Follow the Band" (with chorus of children).
8.30: Banjo and piano—Mr. Cluny MacPherson and Claude Bennett, (a) "The World is Waiting For the Sunrise" (Lockhart and Seitz); (b) piano, "Lover Come Back" (Romberg); (c) piano and banjo, Medley Popular Songs (arr. MacPherson); (d) banjo solo, "Melody in F" (Rubenstein).
8.45: Record—Contralto, Maartje Offers, (a) "Agnus Dei" (with cello, harp and organ) (Bizet); (b) "Noel" (with harp and organ) (Adam).
8.51: Two transcriptions—2YA Salon Orchestra, (a) "Poem" (Fibach); (b) "Serenata" (Tosselli).
9.0 : Weather report and station notices.
9.3 : Record—Xylophone, Fritz Kroeger, (a) "Espanita" (Kroeger); (b) "The Dreaming Snowdrop" (Oertel).
9.9 : Baritone—Mr. Ernest Short, (a) "The Erl King" (Schubert); (b) "Friends Again" (Phillips).
9.15: Record—Tenor, Ernest McKinley, (a) "In the Shade of the Old Apple Tree"; (b) "In the Gloaming" (Lauder).
9.21: 2YA Salon Orchestra—Clarinet with orchestral accompaniment, "Concerto" (Weber).
9.31: Record—Vocal duets, Flanagan Brothers, (a) "Kelly's Cow Has Got No Tail" (Kavanagh and Gibson); (b) "The Girl I Left Behind Me."
9.37: Piano and banjo—Mr. Cluny MacPherson and Claude Bennett, (a) piano solo, "Moonbeams' Dance" (Carroll); (b) banjo solo, "Liebestraum" (Liszt); (c) piano and banjo, "Reaching For the Moon" (Berlin); (d) piano and banjo, "Medley Popular Choruses."
9.51: 2YA Salon Orchestra, (a) Suite "Orientale" (Popy); (b) Latest Dance Novelties.
10.0 : God save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—TUESDAY, JANUARY 5.

SILENT DAY.

4YA, DUNEDIN (650 KILOCYCLES)—TUESDAY, JANUARY 5.

3.0 : Chimes. Selected recordings.
4.30: Sports results.
5.0 : Children's hour, conducted by Aunt Leonore.
6.0 : Dinner music.
7.0 : News session.
8.0 : Chimes. Special presentation by Margharita Zelanda, the brilliant coloratura soprano, assisted by Mr. Wilfred Kershaw, bass; Mr. Maitland McCutcheon, violinist; and Madam Martinelli-Reggiardio's Instrumental Sextet.
8.1 : Overture—Instrumental Sextet, "A Waltz Dream" (Strauss).
Soprano—Margharita Zelanda, "Prelude" (London); (b) "Parla" (Waltz Song) (Arditi).
Violin—Maitland McCutcheon, "Rondo" (Mozart).
Bass—Wilfred J. Kershaw, "Harlequin" (Sanderson); "In Summertime on Bredon" (Peel).
Sextet—"Romanza" (Klosi).
Soprano—Margharita Zelanda, "Sweet Marie" (Moore); "Mi Chimano Mimi" (Puccini); "Musetta Song" (Puccini).
Violin with orchestra—"Love's Greeting" (Elgar); "Joss Sticks."
Bass—W. J. Kershaw, "The Little Old Garden" (Hewitt); "O Sta of Eve" (Wagner).
'Cello—"The Broken Melody" (Van Bien).
Soprano—Margharita Zelanda, "The Tell-tale Tcherpnin" (Henzel).
Sextet—"Cupid's Awakening" (Sentinis).
Violin—Maitland McCutcheon, "Gavotte" (Boch); "Souvenir."
Soprano—Margharita Zelanda, "Philosophy" (Shaw); "Elegy."
Sextet—"Kelly Land" (Wood); "Little Hungry" (Lee).
10.0 : God save the King.

Wednesday, January 6

1YA, AUCKLAND (875 KILOCYCLES)—WEDNESDAY, JANUARY 6.

3.0 : Selected recordings, and literary selection.
5.0 : Children's session, conducted by Uncle Reg.
6.0 : Dinner session.
7.0 : News and market reports.
7.40: W.E.A. session.
8.0 : Chimes. Record—Overture, Band of H.M. Coldstream Guards, "Raymond" (Thomas).
8.5 : Baritone—Mr. Reginald Morgan, (a) "Obstination" (Fontenailles); (b) "Till I Wake" (Woodforde-Finden); (c) "Song of Songs" (Henderson); (d) "Folks Who Live Beside the Sea" (Arundel).
8.15: Instrumental—Haydn Murray's Trio, (a) trio, "Trio No. VIII in B Flat" (Beethoven); (b) piano, "Romance in D Flat" (Sibelius); (c) trio, "Scherzo" (Reissiger).
8.27: Humour—Mr. Dan Flood, (a) "Coming Home" (Jackson); (b) "That There Mrs. 'Ukstep" (Orig.).
8.35: Xylophone and Marimba Duo—Reno and Arta, (a) "Morning, Noon and Night" (Suppe); (b) "My Canary Has Circles Under His Eyes" (Kohler); (c) "I'm Happy" (Baer); (d) "Hungarian Dance No. 6" (Brahms).
8.42: Talk—Mr. Arthur Cone, "My Experiences in Hitch-Hiking Around the World."
9.2 : Weather report and station notices.
9.4 : Instrumental—Haydn Murray's Trio, (a) trio, "Andante" (Beethoven); (b) 'cello, "Priere" (Squire); (c) trio, "Spanish Dance."
9.15: Soprano—Mrs. Laetitia Parry, (a) "Long, Long Ago" (Bayly); (b) "Just" (Bradford); (c) "Gossiping" (Dodge).
9.23: Xylophone and Marimba Duo—Reno and Arta, (a) "William Tell" (Rossini); (b) "One Little Raindrop" (Richman); (c) "Artarina Polka" (own composition); (d) "Stars and Stripes" (Sousa).
9.30: Humour—Mr. Dan Flood, "The Parson at the Sewing Party" (Foster).
9.35: Programme of dance music.
11.0 : God save the King.

2YA, WELLINGTON (720 KILOCYCLES)—WEDNESDAY, JANUARY 6.

10.0 : Chimes. Selected gramophone recordings.
11.37: Lecturette—"Hollywood Affairs."
12.0 : Lunch hour music.
2.0 : Selected recordings.
3.15: Lecturette—Ruth Hay, "Figure Moulding."
3.30 and 4.30: Sporting results.
5.0 : Children's hour, conducted by Aunt Daisy.
6.0 : Dinner session.
7.0 : News session.
7.40: Lecturette—Mr. A. E. Wilson, "Tourist and Health Resorts."
8.0 : Chimes.
8.1 : Record—Overture, Berlin State Opera House Orchestra, "Manfred."
8.13: Record—Soprano, Gladys Moncrieff, (a) "I Was Dreaming"; (b) "Heart's Desire."
8.19: Pianoforte—Arthur Rubenstein, "Capriccio in B Minor" (Brahms).
8.23: Baritone—Ariste Baracchi and Chorus, (a) "The Storm" (Verdi); (b) "Drinking Song."
8.31: Violin—Heifetz, (a) "Ronde des Lutins"; (b) "Scherzo Tarantello," Op. 16.
8.39: Contralto—Karin Branzell, "Gipsy Baron" (Finales, Acts 1 and 2).
8.47: Instrumental—Orchestra of the Concerts Colonne, Paris, "Mother Goose Suite": (a) "Hop o' My Thumb"; (b) "Laideronette, Empress of the Pagodas"; (c) "The Fairy Garden" (Revel).
8.59: Weather report and station announcements.
9.0 : Lecturette—Dr. Guy Scholefield, O.B.E.
9.15: Record—Vocal Gems, Light Opera Company, "Babes in Toyland."
9.23: Quartet—London Flute Quartet, (a) "Melody from 'Rosamunde'" (Schubert); (b) "Bees' Wedding" (Mendelssohn).
9.27: Bass—Theodor Chaliapin, with Russian Opera Chorus, "Merry Butter-week" (Sieroff).
9.31: Instrumental—Berlin State Opera House Orchestra, "Iris" Dances.
9.35: Duet—Meta Seinemeyer, soprano, and Helene Jung, contralto, "Flower Duet" (Puccini).
9.43: Record—'Cello, Pablo Casals, (a) "Musette"; (b) "Mazurka" Op. 11, No. 3.
9.49: Concerted—Light Opera Company, "Rigoletto" (Verdi).
9.57: Band—Debroy Somers Band, "Stealing Thro' the Classics," No. 2.
10.0 : God save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—WEDNESDAY, JANUARY 6.

3.0 : Gramophone recital.
4.25: Sports results.
5.0 : Children's hour.

6.0 : Dinner session.
7.0 : News and market reports.
7.30 : Addington stock market reports.
8.0 : Chimes. Popular programme.
8.1 : Record—Orchestral, Sir H. Harty and Halle Orchestra, "Carnival Overture."
8.8 : Bass—Mr. R. T. H. Buchanan, (a) "What the Red-Haired Bosun Said" (Harrhy); (b) "Tops'l Halyards."
8.14: 'Cello—Mr. Hamilton Dickson, "Andante Cantabile" (Nordini).
8.19: Soprano—Miss Phyllis Coombs, "Nightingale in June" (Sanderson).
8.24: Record—Band, H.M. Grenadier Guards, "New Colonial March."
8.27: Orchestral—Salon Orchestra (Conductor, Mr. Francis Bate), "Le Princesse Jaune" (Saint-Saens).
8.37: Humour—Mr. L. T. J. Ryan, "Random Ramblings No. 2" (own arrgt.).
8.43: Record—Instrumental—piano, P. Grainger, "Moonlight."
8.47: Tenor—Mr. J. Haydn Williams, (a) "The Sea Bird" (Quilter); (b) "Moonlight."
8.51: Orchestral—Salon Orchestra, (a) "Humoreske" (Dvorak); (b) "Le Coucou" (The Cuckoo) (Arensky).
8.59: Contralto—Mrs. Tristram Willcox, "Abide With Me" (Liddle).
9.3 : Record—Band, Grenadier Guards, "Argandab March."
9.6 : Weather report and station notices.
9.8 : Record—Orchestral, Russian Novelty Orchestra, "The Love of a Gipsy."
9.12: Bass—Mr. R. S. H. Buchanan, "Gipsy Love" (Fortune-teller).
9.16: 'Cello—Mr. Hamilton Dickson, (a) "Preghiera" (Martini Kreisler); (b) "Mazurka" (Squire).
9.23: Soprano—Miss Phyllis Coombs, "Only Tired" (C. A. White).
9.28: Record—Organ, Organ Kingsway Hall, London, "Madrigal" (Lemare).
9.31: Humour—Mr. L. T. J. Ryan, "Spring Cleaning" (Robey).
9.36: Orchestral—Salon Orchestra, novelty descriptive Oriental fantasia, "Yishma El" (Jalowicz).
9.45: Tenor—Mr. J. Haydn Williams, "The Last Watch" (Pinsuti).
9.49: Record—Instrumental, Saxophone solo, Rudy Wiedoeft, "Llewellyn Waltz."

9.52: Contralto—Mrs. Tristram Willcox, (a) "Just for To-day" (Leaver); (b) "Hine e Hine" (Te Rangi Pai).
9.58: Record—Band, B.B.C. Wireless Military Band, "Dance of the Dwarfs."
10.1 : God save the King.

4YA, DUNEDIN (650 KILOCYCLES),—WEDNESDAY, JANUARY 6.

3.0 : Chimes. Selected recordings.
4.30: Sports results.
5.0 : Children's hour, conducted by Big Brother Bill.
6.0 : Dinner music.
7.0 : News session.
8.0 : Chimes. Presentation by the Minnesingers and Orchestra, under the conductorship of Mr. John T. Leech.
Overture—The Orchestra, "The Golden Sceptre" (Schlepegrell).
Bass and Chorus—Mr. T. D. White, "The Yeomen of England."
Duet—Miss Ann White and Mr. John T. Leech, "A Night in Venice."
Chorus—"Long Live Elizabeth" (German).
Plantation Song—Miss Noni Davidson, "Sweet Miss Mary."
Ballet Suite—Minnesingers and Orchestra, Ballet "Sylvia" (Delibes); (1) Valse Lente; (2) Pizzicato Polka; (3) March and Procession of Bacchus.
Cameos from Indian Love Lyrics, with descriptive annotations:—Mr. John T. Leech, "The Temple Bells;" Miss Helen Roy, "Less Than the Dust;" Mr. John T. Leech, "Till I Wake." (Woodford-Finden).
Baritone—Mr. L. Harrison Stubbs, L.T.C.L., "The Curfew" (Gould).
Contralto and Chorus—Miss Ruth Sell, "Oh, Peaceful England."
Soprano—Miss Ann White, "Dream of Home" (Arditi).
Selection—Orchestra, "Valse Caprice" (Deffen).
Contralto—Miss Helen Roy: (a) "The Star Flower Tree;" (b) "Pale Priest Beside the Shrine" (Woodford-Finden).
Vocal Ensemble—The Minnesingers, "Robin Hood's Wedding."
Selection—Orchestra, (a) From "Lucia de Lammermoor" (Donnizitti); (b) "Summer Nights" (Zamecnik).
Operatic Solo—Mr. Harry Drew, "Questa o Quella" (Verdi).
Finale—Chorus and Orchestra, Soloist, Miss Ann White, "Oh What Full Delight (Balfe.)
9.30: Dance music until 11 o'clock by Dagg's Dance Band.
11.0 : God save the King.

2YB, NEW PLYMOUTH (1230 KILOCYCLES)—WEDNESDAY, JANUARY 6

7.30 to 8.0: News and information.
8.0 to 10.0: Studio concert.

Thursday, January 7

1YA, AUCKLAND (875 KILOCYCLES)—THURSDAY, JANUARY 7.

3.0 : Selected recordings and literary selection.
5.0 : Children's session, conducted by Skipper.
6.0 : Dinner session.
7.0 : News and market reports.
7.40: W.E.A. session.
8.0 : Chimes. March—1YA Chamber Orchestra (Conductor, Mr. Harold Baxter), "Mercatel" (Heber. Selection—"Ballet Russe Nos. 2 and 5.. (Luigini).
8.11: Baritone—Mr. Stan Pritchard, "Mistress of the Master" (Phillip).
8.15: Record—Accordeon,Guido Devio, "La Spagnola." Record—Comedy, Sir Harry Lauder, "We All Go Hame the Same Way." (Lauder).
8.21: Popular Duets—The Mounce Sisters: (a) "She's a Gorgeous Thing" Coote); (b) "Walking My Baby Back Home" (Ahlert).
8.28: Humour—Mr. Zante Wood, "By Special Request" (Gillespie).
8.34: Suite—1YA Chamber Orchestra, "A Coon's Day Out" (Baynes).
8.44: Contralto—Miss Aimee Clapham: (a) "The Lotus Flower" (Schumann); (b) "Fragile Things" (Montague Phillips).
8.50: Record—Comedy Duo—Happiness Boys, "Who Care Anyhow" (Cleve).
8.53: Waltz—1YA Chamber Orchestra, "Weaner Madl'n" (Ziehrer).
9.1 : Weather report and station notices.
9.3 : Record—Organ, Terence Casey, "Keys of Heaven" (arr. Casey).
9.7 : Baritone—Mr. Stan. Pritchard: (a) "The Wind's an Old Woman" (Bowen); (b) "The Christening" (Purchell).
9.12: Selection—1YA Chamber Orchestra, "Faust Ballet, Nos. 5, 6, 7."
9.18: Humour—Mr. Zante Wood, "The Arts" (Arthurs).
9.23: Popular Duets—The Mounce Sisters, "Two Latest Hits."
9.30: Record—Male Quartet, The Revellers, "Little Cotton Dolly" (Geibel); Record—Instrumental Trio—Roy Smeck's Vitaphone Trio, "Little Sweetheart of the Prairie" (Brown).
9.36: Contralto—Miss Aimee Clapham: (a) "Fairy Pipers" (Brewer); (b) "Four Ducks on a Pond" (Needham).
9.41: Record—Musical Comedy, London Hippodrome Chorus, "Hit the Deck."
9.49: Selection—1YA Chamber Orchestra, "Musical Switch" (Alford).
10.0 : God save the King.

2YA, WELLINGTON (720 KILOCYCLES)—THURSDAY, JANUARY 7.

10.0 : Chimes. Selected gramophone recordings.
10.45: Lecturette—"Cooking."
12.0 : Lunch-hour music.
2.0 : Selected recordings.
3.15: Talk prepared by the Home Science Extension Department of the Otago University.

3.30 and 4.30: Sporting results.
5.0 : Children's hour, conducted by Uncle George and Big Brother Jack.
6.0 : Dinner session.
7.0 : News session.
8.0 : Chimes. Wellington Municipal Tramways Band—(a) Overture, "Poet and Peasant" (Suppe); (b) Foxtrot, "Bubbling Over With Love."
8.15: Baritone—Mr. Walter Brough—(a) Onaway Awake Beloved" (Cowen); (b) "For the Green" (Lohr).
8.21: Instrumental and vocal, Majestic Lounge Quintet—(a) Rythmic Paraphrase on the opera "Faust" (arr. by Lange); (b) Trumpet solo "Quarter from 'Rigoletto'" (Verdi); (c) Medley of popular airs.
8.36: Record—Mezzo-Soprano, Marguerite D'Alvarez, "Caro Mio Ben" (Belcapau); "Down Here" (Brake).
8.40: (a) Cornet Duo—Messrs. Stevenson and Bowman, "The Swallow's Serenade" (Mackenzie); (b) Wellington Municipal Tramways Band—Selection, "Mignon" (Thomas).
8.55: Humour—Mr. W. J. McKeown, "Guido the Gimlet" (Leacock).
9.0 : Weather report and station notices.
9.3 : Majestic Lounge Quintet—(a) Fantasie Orientale (A. Lange); (b) Aloha Oe; (c) Novelty Toxtrot, "Sleepy Town Express."
9.19: Baritone—Mr. Walter Brough—(a) "You Are My Heart's Delight" (Lehar); (b) "I Travel the Road" (Thayer).
9.25: Wellington Municipal Tramways Band—(a) Bagpipe, with band accompaniment, "The Road to the Isle" (MS); (b) Horn solo, "Silver Threads," with variations (Allison); (c) March, "Brilliant."
9.40: Humour—Mr. W. J. McKeown, "The Strong Man" (Patterson).
9.46: Wellington Municipal Tramways Band—(a) March, "Australasian" (Rimmer); (b) Flexatone solo, "Lazy Louisiana Moon" (Donaldson); (c) March, "Victor's Return."
10.0 : God save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—THURSDAY, JANUARY 7.

3.0 : Gramophone recital.
4.25: Sports results.
5.0 : Children's hour.
6.0 : Dinner session.
7.0 : News and market reports.
7.15: Talk, by Mr. R. F. Marshall, manager Government Tourist Department, Christchurch—"Tourist Resorts."
7.30: Talk—Review of the "Journal of Agriculture."
8.0 : Chimes. Orchestral—Studio Orchestra (Harold Beck, conductor), "Coriolanus Overture" (Beethoven).
8.8 : Contralto—Miss Millicent Jennings, (a) "The Sad Little Bird" (Arensky); (b) "Unrengenied" (Huperdinck); (c) "Nymphs and Shepherds" (Purcell).
Classic Duo—Contralto, Miss Millicent Jennings; baritone, Mr. T. Robson, "Autumn Song" (Mendelssohn).
8.15: Piano—Miss Aileen Warren. "Scherzo in B Flat Minor" (Chopin).—
8.25: Record—Instrumental, 'cello, W. H. Squire, "Plaisir d'Amour."
8.28: Baritone—Mr. T. Robson, (a) "The Moon" (Mendelssohn); (b) "The Early Morn" (Graham Peel); (c) "Raft Song" (from "Sunset on the Alleghany"), (Nevin).
8.32: Violin and orchestra—Soloist, Miss I. Morris and Studio Octet, "Farewell to Cucullian" (arr. by H. Harty).
8.36: Soprano—Miss Frances Hamerton, (a) "Waltz Song," "Romeo and Juliet" (Gounod); (b) "Chanson Indoue" ("Song of India"), (Rimsky-Korsakov).
8.43: Piano—Miss Aileen Warren. "Cradle Song" (Brams, arr. Percy Grainger).
8.46: Baritone—Mr. T. Robson, "Shepherds' Joy" (Sanderson).
8.50: Orchestral—Studio Orchestra, (a) "Minuet"; (b) "Presto" (from "Oxford Symphony"), (Haydn).
9.0 : Classic duo—Contralto, Miss Millicent Jennings; baritone, Mr. T. Robson. "Where the Bee Sucks" (Arne).
Contralto—Miss Millicent Jennings, (a) "Rabbit Song"; (b) "The Jolly Wind"; (c) "Prince Paul Percival" (Alec Rowley).
9.7 : Weather report and station notices.
9.9 : Record—Orchestral, Berlin State Orchestra, "Salome's Dance."
9.15: Soprano—Miss Frances Hamerton, Polonaise, "Je Suis Titania" (I am Titania), (from "Mignon," Thomas).
9.19: Orchestral—Studio Orchestra, "Music Pictures" (Foulds).
9.30: Programme of dance music.
11.0 : God save the King.

4YA, DUNEDIN (650 KILOCYCLES)—THURSDAY, JANUARY 7.

(SILENT DAY)

Friday, January 8

1YA, AUCKLAND (875 KILOCYCLES)—FRIDAY, JANUARY 8.

2.0 : Relay of resume of Plunket Shield cricket match—Canterbury v. Auckland—at Eden Park.
5.0 : Children's session, conducted by Nod and Aunt Jean.
6.0 : Dinner session.
7.0 : News and market reports.
7.40: Sports talk.
8.0 : Chimes. Record—Debroy Somers Band, "Community Medley."
8.5 : Soprano—Miss Amy Eaton, (a) "Scenes That Are Brightest" (Wallace); (b) "Love's a Merchant" (Carew).
8.12: Novelty, saxophone and piano—The Watters Duo, saxophone, "Song of India" (Korsakoff); pianoforte, "Charleston Chuckles" (Confrey); saxophone, "Saxaphun" (Wiedoeft).
8.21: Humour—The Tollies, "A Little Nonsense by the Tollies."
8.31: Record—Cornet, Del Staigers, "Carnival of Venice" (Benedict).
8.34: Novelty instrumental—The Mati Trio, (a) "Oh You Beautiful Doll" (Bambridge); (b) "Memory Lane" (Henderson); (c) "Wabash Blues" (Oxley).
8.42: Tenor—Mr. Tim Moffitt, (a) "Charming Chloe" (German); (b) "Roses of Picardy" (Wood).
8.48: Clarinet—Mr. S. C. Lewis, (a) "Cavatina—Ernani" (Lazarus); (b) "Tiroler Lied" (Kroepsch).
8.58: Record—Organ, G. T. Plattman, "Cinderella Waltz" (Plattman).
9.1 : Weather report and station notices.
9.3 : A sea story—Lee Fore Brace, "A Hoodoo Ship."
9.23: Novelty, saxophone and piano—The Watters Duo, pianoforte, "If I Lost You" (Harrison); saxophone, "Saxema" (Wiedoeft).
9.30: Soprano—Miss Amy Eaton, "Shadow Song" from "Dinorah."
9.34: Novelty instrumental—The Mati Trio, (a) "Hawaiian Moonlight" (Kaaili); (b) "Kalani" (Lou); (c) "My Own Iona" (Lou).
9.41: Humour—The Tollies, "A Little Nonsense by the Tollies."
9.51: Tenor—Mr. Tom Moffitt, (a) "Gondola Dreams" (Lambert); (b) "The Carnival" (Molloy).
9.56: Record—Debroy Somers Band, "A Hunting Melody" (arr. Somers).
10.2 : God save the King.

2YA, WELLINGTON (720 KILOCYCLES)—FRIDAY, JANUARY 8.

10.0 : Chimes. Selected gramophone recordings.
11.12: Lecturette—"Fashions."
12.0 : Lunch hour music.
2.0 : Selected recordings.
3.30 and 4.30: Sporting results.
5.0 : Children's hour, conducted by Uncle Jim.
6.0 : Dinner session.
7.0 : News session
8.0 : Chimes. Overture—2YA Orchestrina (Conductor, Signor A. P. Truda), "Poet and Peasant" (Suppe).
8.8 : Mezzo-soprano—Miss Phyllis Leighton, (a) "Madonna and Child" (Thiman); (b) "The Beautiful House" (Donald Ford).
8.14: Record—Novelty Instrumental, Novelty Orchestra (with yodelling). (a) "The Mountain Forge"; (b) "Bulialiety."
8.20: Humour—Mr. Les Anderson, "Trying a Magistrate" (Toole).
8.25: Selection—2YA Orchestrina, "Waltz Dream" (Strauss).
8.35: Light baritone and piano solos—Mr. Dan Foley and Mr. Frank Crowther, (a) "At the End of an Irish Lane" (Clint); (b) "The Little Old Church in the Valley" (Van Aletyne); (c) "The Rose of Tralee" (Barry).
8.50: 2YA Orchestrina, (a) "Salut d'Amour" (Elgar); (b) "Pezilietta."
8.58: Mezzo-soprano—Miss Phyllis Leighton, "When the Children Sleep."
9.0 : Weather report and station notices.
9.4 : Light baritone and piano solos—Mr. Dan Foley and Mr. Frank Crowther, (a) "I Travel the Road" (Thayer); (b) "Just Two Hearts and a Waltz Refrain" (Stolz); (c) "You Are My Heart's Delight"
9.18: Humour—Mr. Les Anderson, "Troubles of Guy de Vere" (Byron).
9.23: 2YA Orchestrina—(a) "Bunch of Roses" (Chapi); (b) "Myrella" (Berniaux); (c) "A Zut Alors" (Lamont).
9.31: Dance programme—Recordings.
11.0 : God save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—FRIDAY, JANUARY 8.

3.0 : Gramophone recital.
4.25: Sports results.
5.0 : Children's hour.
6.0 : Dinner session.
7.0 : News and market reports.
8.0 : Chimes. Variety programme. Orchestral—Studio Orchestra (Conductor, Harold Beck), "The Bronze Horse" (Auber).
8.7 : Bass-Baritone—Mr. J. Miles Cadman, (a) "For the Green" (Lohr); (b) "The Little Irish Girl."
8.13: Record—Choral, Chelsea Singers, "Now is the Month of Maying."
8.16: Violin and piano—Miss Norma and Mrs. Margaret Middleton, Old English Melodies, (a) "Drink To Me Only"; (b) "Sally in Our Alley"; (c) "Home, Sweet Home" (arr. Middleton).
8.22: Soprano—Miss Cecily Audibert, (a) "Madrigal" (Chaminade); (b) "Sitting at Home by the Fire" (Brahe); (c) "A Robin's Song."
8.29: Record—Band, Grenadier Guards, "The Larks' Festival"; "The Two Little Finches."
8.35: Humour—Mr. J. J. Flewellen, (a) "Sausages" (arr. Flewellen); (b) "Fashions" (Hayes).
8.40: Orchestral—Studio Orchestra, "Ballet Suite La Source"; (a) "Scarf Dance"; (b) "Love Scene"; (c) "Dance Circassin" (Delibes).
8.48: Tenor—Mr. Dug Suckling, (a) "The Fairy Tales of Ireland" (Coates); (b) "God Touched the Rose" (Helen Browne).
8.55: Record—Piano, Una Bourne, "November" (Palmgren); "Finnish Rhythms."
9.3 : Weather report and station notices.
9.5 : Orchestral—Studio Orchestra, "Second Sullivan Selection."
9.17: Bass-baritone—Mr. J. Miles Cadman, (a) "The Monk Within His Cell" (Robin Hood), (Macfarren); (b) "The Old English Gentleman" (Purday).

9.23: Record—Violin, Mischa Elman, "Nur wer die Schnsucht" (Kennt).
9.27: Humour—Mr. J. J. Flewellen, "Health" (Hayes).
9.32: Violin and piano—Miss Norma and Mrs. Margaret Middleton, (a) Boat Song" (Ware); (b) "Farewell My Love" (Lehar); (c) "The Song is Ended" (Berlin).
9.40: Soprano—Miss Cecily Audibert, (a) "Sing Heigh O" (Ketelbey); (b) "Allah's Holiday" (Friml).
9.45: Orchestral—Studio Orchestra. Valse, "Blue Danube" (Strauss).
9.55: Tenor—Mr. Dug Suckling, "Wait" (D'Hardelot, arr. Higgs).
9.58: Record—Band, Parlophone Military Band, "Steadfast and True."
God save the King.

4YA, DUNEDIN (650 KILOCYCLES)—FRIDAY, JANUARY 8.

3.0 : Chimes. Selected recordings.
4.30: Sports results.
5.0 : Children's Hour, conducted by Big Brother Bill.
6.0 : Dinner music.
7.0 : News session.
8.0 : Chimes. Variety programme by the Melodists Quartet, assisted by Mr. W. J. Sinton, xylophonist; Mr. J. McGee, saxophonist; Mr. B. Brown, Scottish humour; The Phillip Sisters, novelty entertainers; and Madame Reggiardo's Orchestra.
Reggiardos Sextet—"My Cinderella Girl"; "The Roses' Honeymoon."
The Melodist—"Comin' through the Rye" (McBeath); "Robin Adair."
Xylophone—Mr. W. J. Sinton, "Teddy Bears' Picnic"; "Eldorado March."
Scottish Humour—Mr. B. Brown, "At Home in Bonnie Scotland."
Novelty—Phillip Sisters, "You're Driving Me Crazy" (Donaldson): "I'm Only the words" (De Sylva).
The Melodists—"Early in the Morning" (Broughton); "Song of the May Morning" (McBurney).
Sextet—"Nocturne" (Chopin); "Pansies for Thought" (Blyn).
Weather report and station notices.
Saxophone—Mr. J. McGee, "Sax o' Friends" (Smith); "Jazzima."
The Melodists—"Sleep, Gentle Lady."
Bass solos—"The Sailor's Paradise" (Richards); "Brian of Glenaar."
Xylophone solo—"Morning, Noon, and Night" (Suppe).

Soprano—"Then Came the Dawn" (Warren).
Saxophone—Mr. J. McGee, "Helen" (Smith).
Tenor—"The Man Who Brings the Sunshine" (Fields).
Sextet—"The Walk of the Fishes" (Bohlein).
10.0 : God save the King.

Saturday, January 9

1YA, AUCKLAND (875 KILOCYCLES)—SATURDAY, JANUARY 9.

2.0 : Relay of resume of the Plunket Shield cricket match—Canterbury v. Auckland, at Eden Park.
5.0 : Children's session, conducted by Cinderella.
6.0 : Dinner session.
7.0 : News and market reports.
8.0 : Chimes. During the evening there will be a relay of a running description of Broadsiding from Western Springs Stadium.
Record. March—Band of H.M. Coldstream Guards, "Marche aux Flambeaux." (Meyerbeer).
Vocal Quartet—The Clarions, "Come to the Show" (Passing Show).
Contralto—Miss Beryl M. Smith, (a) "My Crinoline" (Country Girl) (Monckton); (b) "June in Kentucky" (Ring).
Vocal Duet—Miss Lillian Woods and Mr. Lambert Harvey, "Two Little Chicks" (Country Girl) (Monckton).
Concertina—Mr. Robert McKnight, "Fantasia on 'The Last Rose of Summer'" (arr. Farmer).
Humour—Miss Marian Irving, (a) "Girl at the Cinma" (Wish Wynne), (b) "Ello Martha" (Smith).
Novelty Instrumental—J. M. da Silva, and His South Sea Wanderers, (a) "American Medley" (arr. Debroy Somers); (b) "When Your Hair Has Turned to Silver" (Tobias).
Soprano—Miss Lillian Woods, "Love, the Jester" (Phillips).
Vocal Duet—Miss Beryl M. Smith and Mr. Duncan Black, "O Sarah, O 'Enery" (Longstaff).
Vocal Quartet—The Clarions, "Robinson Crusoe Isle" (Stolz).
Record—Waltz—Mitza Nikisch and His Symphony Orchestra, "Madelon—Dream Waltz" (Nikisch).
Humour and Song—The Twa Macs, "Scottish Humour and Song."
Weather report and station notices.
Concertina—Mr. Robert McKnight, (a) "Minuet" (Boccherini) (arr. McKnight); (b) march, "The Slogan" (Klohr).
Tenor—Mr. Lambert Harvey, "Down Here" (Brahe).
Bass—Mr. Duncan Black, "Come to the Fair" (Martin).
Vocal Quartet—The Clarions, "The Bubble" (High Jinks) (Friml).
Novelty Instrumental—J. M. da Silva and His South Sea Wanderers, (a) "Humoresque" (Dvorak); (b) "Hawaiian Medley."
Humour and Song—The Twa Macs, "Scottish Humour and Song."
Sports results.
Programme of dance music.
God save the King.

2YA, WELLINGTON (720 KILOCYCLES)—SATURDAY, JANUARY 9.

3.0 : Chimes. Selected gramophone recordings.
3.30 and 4.30: Sporting results.
5.0 : Children's hour, conducted by Aunt Molly and Uncle Jasper.
6.0 : Dinner session.
7.0 : News session.
8.0 : Chimes. Overture—National Symphony Orchestra, "Sakuntala."
8.8 : Vocal—Melodie Four, (a) quartet, "Timbuctoo" (Giebel); (b) bass solo, Mr. W. Marshall, "Drinking" (Lennox).
8.14: Overture—2YA Salon Orchestra (Conductor, Mr. M. T. Dixon), "Babylon Nights" (Zamecnik).
8.24: Vocal—Melodie Four, (a) tenor solo, Mr. S. Duncan, "I Hear You Calling Me" (Marshall); (b) quartet, "An Evening Pastoral" (Shaw); (c) "In the Shadows" (Finck).
8.30: Record—Baritone, Maurice Chevalier, (a) "Bon Soir"; (b) "Mama Inez."
8.36: Tenor—Mr. F. Bryant (a) "I Heard You Singing" (Coates); (b) "I Love the Moon" (Reuters).
8.42: Novelty—Salon Orchestra, Two Versions of the "Blue Danube."
8.52: Record—Humour, Horace Kenny, "Almost a Film Actor."
9.0 : Weather report and station notices.
9.2 : Talk—Mr. B. S. Merlin (late Major-General in the Tsar's Imperial Army), "My Experiences with the Bolsheviks."
9.17: Salon Orchestra—(a) "The Land of Mystic Egypt" (Ketelbey); (b) "Bells Across the Meadows" (Ketelbey).
9.27: Soprano—Miss Marie Burke, (a) "The Song is Done" (Connolly and Stoltz); (b) "I'll Always be True" (Connolly and Banatzky).
9.33: Baritone—Mr. R. S. Allright, "The Irish Orchestra" (Till).
9.37: Fantasia—Salon Orchestra, "Maori Airs" (arr. Dixon).
9.45: Quartet—Melodie Four, (a) "Mosquitoes" (Bliss); (b) Down at the Huskin Bee" (Henry).
9.51: Salon Orchestra—(a) "Grasshoppers' Dance" (Bucalossi); (b) "Valse Armourette" (Kleuam).
10.0 : Dance programme.
11.0 : Sporting summary.
11.10: God save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—SATURDAY, JANUARY 9.

3.0 : Gramophone recital.
4.25: Sports results.
5.0 : Children's hour.
6.0 : Dinner session.
7.0 : News and market reports.
8.0 : Chimes. Vaudeville and Dance Programme. Record—"Eighteenth Century" Orchestra, "Beggars' Opera" (Parts 1 and 2).
8.8 : Tenor—Mr. David McGill, (a) "One Flower Grows Alone" (Romberg); (b) "O, Vision Entrancing" (Goring-Thomas).
8.16: Cornet—Mr. R. Ohlson, "Macushla" (Macmurrough).
8.19: Record—Choral, "I Know of Two Bright Eyes."
8.23: Orchestral—Salon Orchestra (Conductor, Mr. Francis Bate); "Valses Piquantes" (Graham Peel).
8.31: Contralto—Miss Nellie Lowe, (a) "A Japanese Love Song" (Brahe); (b) "When Stars Were Young" (Rubens); (c) "My Haven of Dreams" (Barry).
8.38: Piano Recital, with introductory comments—Miss Gladys Watkins, A Group of Dances—(a) "Rigaudon" (Nieman); (b) "Spanish Dance" (Granados); (c) "Polka" (Glazounoff); (d) "Concert Study on the Sailor's Hornpipe" (Ernest Dicks).
8.48: Humorous Sketch—The Mascots, "A Lot for Your Money" (More adventures of Joe and Vi) (Carlton and Manley).
9.8 : Weather report and station notices.
9.10: Record—Orchestral, Grand Symphony, "Round the World by Hire" (Parts 1 and 2).
9.16: Tenor—Mr. David McGill, (a) "I Hear a Thrush at Eve" (Cadman); (b) "Bird Songs at Eventide" (with bird songs in the background).
9.21: Cornet—Mr. R. Ohlson, "From Songs Without Words—'Allegro Con Fuoco'" (Mendelssohn).
9.25. Record—Vocal Gems from "Street Singer."
9.28: Orchestral—Salon Orchestra, Four Indian Love Lyrics, (a) "The Temple Bells," (b) "Less Than the Dust"; (c) "Kashmiri Song"; (d) "Till I Wake" (Woodforde-Finden).
9.39: Contralto—Miss Nellie Lowe, (a) "Angus Macdonald" (Roeckel); (b) "Just a Ray of Sunshine" (Squire).
9.45: Record—Organ—(a) Interlude; (b) Idylle.
9.48: Record—Duet, Dora Labette and H. Eisdell, "Very Own Pierrette."
9.51: Orchestral—Salon Orchestra, Selection, "My Son John" (Oscar Strauss)
10.0 : Programme of dance music.
11.0 : God save the King.

4YA, DUNEDIN (650 KILOCYCLES)—SATURDAY, JANUARY 9.

3.0 : Chimes. Selected recordings.
4.30: Sports results.
5.0 : Children's hour, conducted by Aunt Anita.
6.0 : Dinner music.
7.0 : News session.
8.0 : Relay of concert programme from 3YA, Christchurch.
10.0 : Dance session.
11.0: God save the King.

2YB, NEW PLYMOUTH (1230 KILOCYCLES)—SATURDAY, JANUARY 9.

7.30 to 8.0: News and information.
8.0 to 10.0: Studio concert.

Sunday, January 10

1YA, AUCKLAND (875 KILOCYCLES)—SUNDAY, JANUARY 10.

3.0 : Selected recordings and literary selection.
6.0 : Children's song service, conducted by Uncle Leo.
7.0 : Relay of service from St. Andrew's Church. Preacher: Rev. Ivo. Bertram. Organist and Choirmaster: Dr. Neil McDougall.
8.30 (approx.): Relay of Municipal Band Concert from Albert Park. Conductor: Mr. George Buckley.
March—The Band, "Aguero" (Franco).
Overture—The Band, "The Flying Dutchman" (Wagner).
Cornet—Mr. J. Davies, "Cleopatra" (Damare).
Suite—The Band, Peer Gynt: (a) "Morning" (b) "Ase's Death;" (c) "Anitra's Dance;" (d) "In the Hall of the Mountain King" (Grieg).
Piccolo—Mr. Hal. C. McLennan, "Souvenir de Liege" (Gennin).
Selection—The Band, "Yeomen of the Guard" (Sullivan).
Intermezzo—The Band, "Dream Flowers" (Translateur).
Hymn—The Band, "Light's Above Celestian Salem" (Elliot).
March—The Band, "Dunedin" (Alford).
10.0 : God save the King.

2YA, WELLINGTON (720 KILOCYCLES)—SUNDAY, JANUARY 10.

3.0 : Selected gramophone recordings.
6.0 : Children's song service, conducted by Uncle George and assisted by the children's choir from the Kent Terrace Presbyterian Church, conducted by Mr. Jack.
7.0 : Relay of service from the Taranaki Street Methodist Church. Preacher, Rev. T. R. Richards.
8.15 (approx.): Concert by the Band of the Wellington Division Royal Naval Volunteer Reserve, and 2YA Artists.
March—The Band, "Great Little Army" (K. Alford). Selection, "La Militaire" (W. Raymond).
Soprano—Miss Christina Ormiston, (a) "The Lord is my Light" (Allitsin); (b) "The Lotus Flower" (Schumann); (c) "Spring Night."
Violin—Miss Ava Symons—(a) "Schon Rosmarin" (Kreisler); (b) "The Foggy Dew" (Arthur Alexander); (c) "Sicilienne and Rigaudon" (Francoeur-Kreisler).
Baritone—Mr. Keith Grant, (a) "Danny Deever" (Walter Damrosch); (b) "Mandalay" (Oley Speaks).
Cornet solo—Mr. W. Bowman "Alas! Those Chimes" (Wallace).
Waltz—Band—"The Grenadiers" (Rimmer).
Violin—Miss Ava Symons, (a) "Chant" (Cameron White); (b) "Obeitass" (Wieniawski); (c) "Serenade Espagnole."
Soprano—Miss Christina Ormiston, (a) "Ave Maria" (Schubert); (b) "Open Secret" (Huntington Woodman).
Band—Selection, "Fra Diavolo" (Auber).
Baritone—Mr. Keith Grant, (a) "Western Wind" (May Brahe); (b) "My Resting-place" (Schubert).
Band—(a) "Meditation, Sanctuary of the Heart" (Ketelby); (b) Hymn, "Abide With Me" (Monk).
God save the King.

3YA, CHRISTCHURCH (980 KILOCYCLES)—SUNDAY, JANUARY 10.

3.0 : Gramophone recital.
5.30: Children's hour, conducted by Rev. L. A. North, assisted by children from the Oxford Terrace Baptist Sunday school.
6.15: Chimes.
6.30: Relay of Evening Service from the Oxford Terrace Baptist Church. Preacher: Rev. L. A. North. Organist: Mr. W. Melville Lawry. Choirmaster: Mr. Vic Peters.
7.45: Selected recordings.
8.15 (approx.): Relay of programme from 4YA, Dunedin.
10.0 : God save the King.

4YA, DUNEDIN (650 KILOCYCLES)—SUNDAY, JANUARY 10.

3.0 : Chimes. Selected recordings.
5.30: Children's song service, conducted by Big Brother Bill.
6.15: Instrumental recordings.
6.30: Relay of evening service from St. Paul's Anglican Cathedral. Preacher: Canon E. R. Nevill. Organist and choirmaster: Mr. E. Heywood.
7.45: (approx.): Instrumental recordings.
8.15: Relay from the Dunedin Town Hall of Organ Recital by Dr. V. E. Galway, assisted by vocal artists.
9.30: From the Studio:—
Bass solo—Mr. F. E. Woods, (a) "From Oberon in Fairyland" (Slater); (b) "The Bandolero" (Stuart).
Violin solo—Mr. Maitland McCutcheon, (a) "L'Abeille" (Schubert); (b) "Palme" (Fibich).
Soprano solo—Miss Clare Dillon, (a) "Caro Nome" (Verdi); (b) "Has Sorrow Thy Young Days Shaded" (Moore).
Violin—Mr. Maitland McCutcheon, "Sonata in F Major" (Beethoven) (for violin and piano).
Bass solo—Mr. F. E. Woods, "I Triumph, I Triumph" (Carissimi).
God save the King.

2YB, NEW PLYMOUTH (1230 KILOCYCLES)—SUNDAY, JANUARY 10.

7.0 to 8.15: Church relay.
8.15 to 10.0: Studio concert.

Useful Tips

WHERE pick-up leads must necessarily be long it is a good plan to incorporate an audio transformer with short wiring from its primary to the grid circuit so that the long leads to the secondary are decoupled from the valve.

WHEN dealing with R.F. amplification, "B" current is small, so there is no danger in pulling out the R.F. grid-bias plug and trying different tappings while the set is on.

WHEN using flex leads to carry the heater current in an all-electric receiver, be sure that it is possible to do this without dropping the heater voltage.

WHEN adjusting a double crystal type of detector always draw the adjusting control knob back before attempting to find a fresh surface, as in this way you avoid scraping the two crystal surfaces together.

WHEN a condenser intended to be used for ordinary D.C. supply is being tested, the test voltage should be at least twice the normal supply voltage. For condensers to be used with alternating current mains the test voltage should be at least three times the value of the alternating voltage across the condenser.

WITH audio valves, and particularly with power valves, it is important always to switch off the set before adjusting the grid-bias plug in its battery.

THE use of "armoured" twin flex for pick-up leads (in which the covering can be earthed) is frequently effective in removing hum.

GOOD contact is particularly important in a crystal set where resistance losses can be serious in the aerial or earth circuit.

WHEN considering valves of similar characteristics, remember that, generally speaking, the one with the highest mutual conductance is the best.

The Presto Set

(Continued from page 17.)

be connected to their components under the sub-base and left of sufficient length to reach their other connections.

The change-over switch is secured in place on the shelf, and the panel held temporarily in its relative position. Each stator can now be connected to its corresponding switch spring, the bottom condensers to the back springs, using short rubber-covered leads. Do not trust the condenser rotors to connect to the panel, but make to each of the tags provided a proper wire connection direct to the earthing 18-gauge wire.

The shelf and panel may now together be lifted into the cabinet, after which the sub-base will follow, finally placing the aluminium sides in position, securing with a screw or two through holes already drilled near the top. The sub-base may still be lifted at the back edge sufficiently to pass leads through the holes in the shelf. Long wires must be already provided from the jack or bottom of detector secondary coil to point C, from the cathode 1 mfd. condenser, and from the lower end of the voltage divider resistance, for the purpose of fixing the hum-bucking resister.

The jack may now be connected up, if one is provided, otherwise the bottom of the coil, .5 mfd. by-pass condenser, and lead to point C are all connected together.

To connect the jack, the spring connecting to tip of the plug connects to point C; the spring connecting to sleeve of plug connects to bottom of coil, and the contacts made by each of the two springs when the plug is withdrawn, are both connected to the .5 mfd. by-pass condenser. Be sure that the red marked cord of the pick-up is connected to the tip of the plug.

The Diagrams.

IN order to clear up any points that may have been missed, we will now take a run through the diagrams.

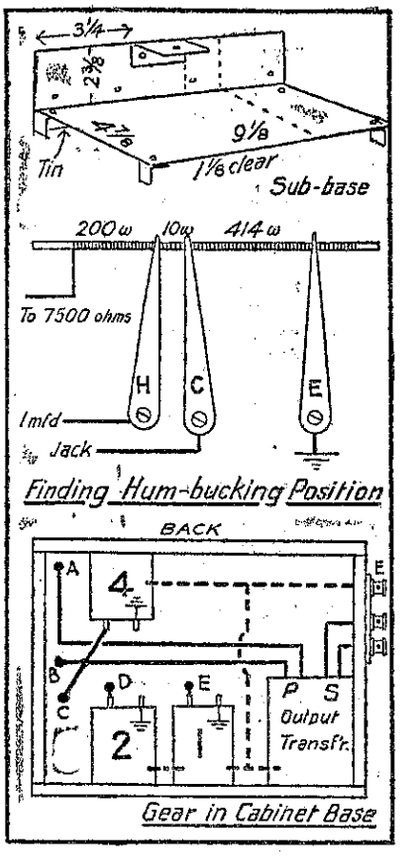
In the theoretical there is little to comment upon. If desired, .5 mfd. by-pass condensers may be used in place of the two mica .008 shown. The 280 filament winding is shown twice, chiefly to show that there are three filament windings in all.

The aluminium sizes are given so that an idea of quantity may be formed, although the size may not be adhered to exactly. Shielding is essential for the power-pack, but not for the receiver, if more than two miles from a main station. If the back of the upper portion is left open, the heat from the valves is more readily dissipated. As well as the pieces shown, there is the sub-base.

Flexible wire from the transformer to mains must now always be the solid rubber variety, in which the two conductors are embedded in the rubber. The 280 rectifier is in a horizontal position, the socket being screwed inside the front of the cabinet.

High-tension and filament leads from transformer to 280 should be sufficiently slack to allow of the choke being easily extracted from the cabinet, all leads to the choke being of sufficient length to allow this.

The plan of the receiver shows the general lay-out, the coil cans being omitted and their positions shown by



dotted circles. Connections to the detector coils are shown as far as the can. The aerial wire should be fitted with a plug to fit the socket provided. A piece of 18 gauge bare wire connects to the back of this socket and projects inside the can to permit of soldering the primary to it. The top of secondary coil comes through the can and joins the wire running from switch to grid, as in the detector stage. The primary and secondary coils are earthed by connecting the lower end of each to a solder-tag, which is fastened by a screw passing through the centre of the bottom of the can. The r.f. screen resistors are shown unmounted —space is economised by soldering leads to the ends, then wrapping the whole in adhesive tape. The .008 mfd. condenser across the 235 cathode resistor is conveniently of the upright type, the resistance being connected across the terminals.

With the Igranic jack shown, the .5 mfd. condenser is connected to both contacts on one side, and when the plug is withdrawn, both springs contact the condenser. Any jack that is used must be connected so that there is no connection to the .5 mfd. when the pickup is in use. A one-inch hole should be made in the side of the cabinet for insertion of the plug into the jack.

By winding all coils in the one direction connections will work out correctly as shown.

The space of 1 1-8in. under the sub-base is the minimum, but may be increased about ¼in. to suit components, though care should be taken to save as much space as possible.

Clips were first used to find the hum-control resistances, but did not prove very satisfactory, so the resistor was fixed to the edge of a piece of 1in. wood by a nail through each end of a lath laid over the resistor.

There is plenty of room in the cabinet base for the smoothing condensers. Earth one side of each condenser, and all cases, if of metal, as shown by the dotted line.

The wire at A runs up through the power-pack to the r.f. choke and plate of 245. The wire at B carries full voltage to the .5 meg. of resistor chain. Wires passing through the power-pack should be of the metal-shielded type. The wire at D connects to the input side of the smoothing-choke, and E to the choke centre-tap.

The secondary of the output transformer connects to the pair of terminals outside the bases.

Connections under the sub-base are shown clearly by drawing the components in their relative positions, but much reduced in size. This wiring is all done with rubber-covered flexible wire, and looks somewhat confusing when completed, the shortest route from point to point being taken.

A little ingenuity is required to use available bolts to hold the components. The inner end of the voltage-divider is held by a countersunk screw under the 224 socket. Any condenser may have one or two solder-tags attached, so that it may be held by adjacent screws. Non-metal condensers may be held by a strap of wire over them from one screw to another, or may be glued in position.

The B positive wire from the .25 meg. is shown through a hole, but this hole is actually in the shelf, and not in the sub-base. The hole at x is for the wire from below to the s.f. choke and 245 plate.

Final Adjustments.

SMALL variations may be tried by moving the clip 1-8in. or so either way along the voltage divider. The 2-meg. resistor may be higher than its rated value, and better results may be obtained with a high-rated one-meg. The 20,000 resistor may be reduced to as low as 15,000 or a little less. There should be 250 volts on the 235 plate and 90 volts on the screen. Point A should show about 180 volts. A good wire-wound 15,000 ohm resistor should be used in the 224 cathode lead, as this value is critical.

Useful Hints

A THIN piece of metal—much too thin to be self-supporting—is quite satisfactory when secured to a background of stiff cardboard or three-ply work to act as a screen.

AMONG the rough-and-ready emergency screens which can be used are cigarette packet foil, or a thin coat of aluminium paint or gold paint.

ONE reason why it is dangerous to short an accumulator is that such a battery has a very low internal resistance, and, therefore, delivers an enormous current on short circuit.

FOR receiving short-wave Morse, as distinct from broadcasting, it is advisable to use a high-ratio audio transformer, owing to the greater sensitivity of this arrangement.

THE output filter on a short-wave set tends not only to eliminate hand-capacity effects but also to decrease the liability to threshold howl.

The "Super-Six"

THOUGH quite a number of constructors have built the "Super Six" receiver (described in these pages a short time ago), and are very pleased with results, a few have confessed their inability to follow the under-baseboard wiring of the set from the photograph published.

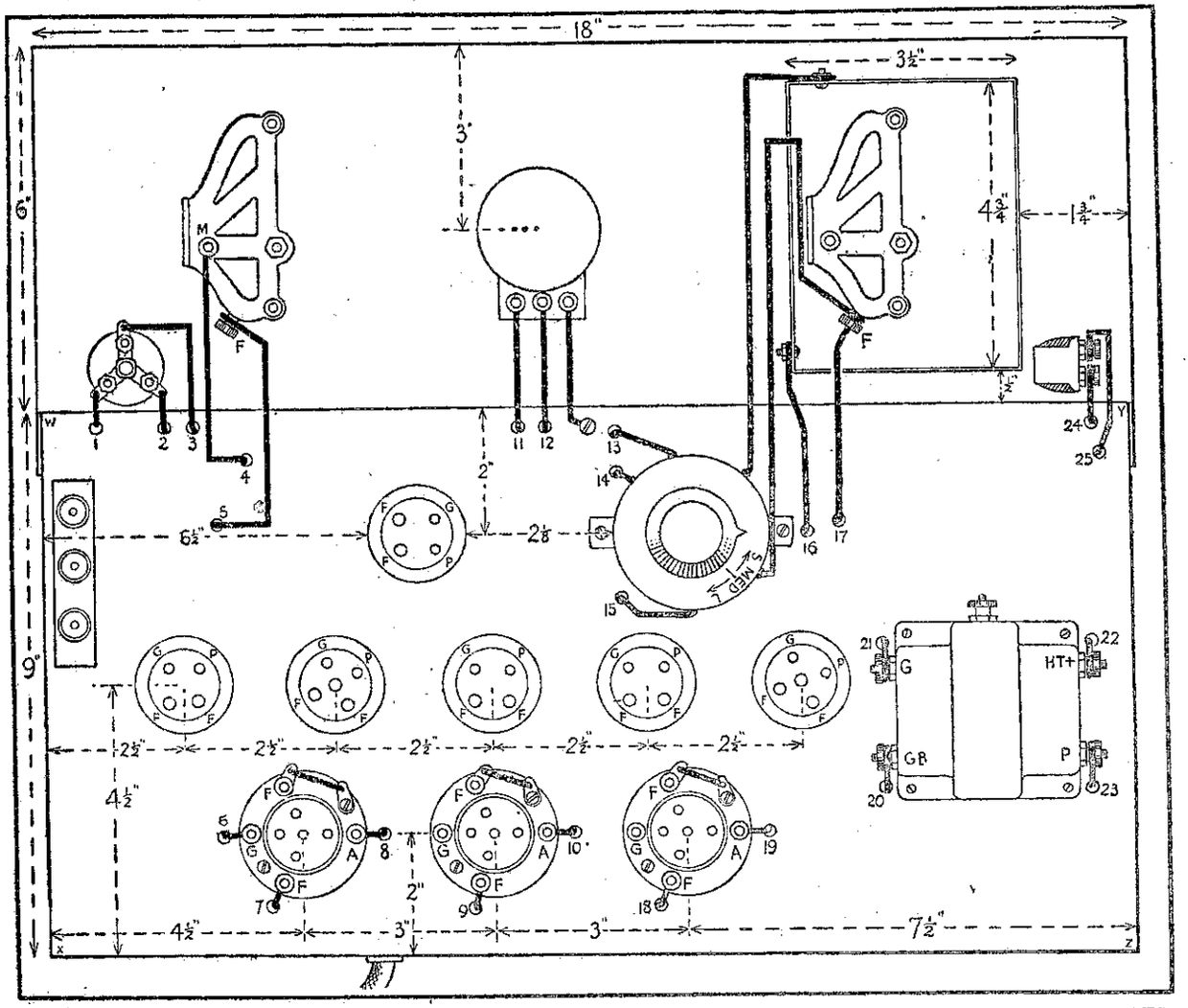
We ourselves are partly responsible, because the values of two of the spaghetti resistances are wrongly shown in the photograph, though the theoretical diagram is correct.

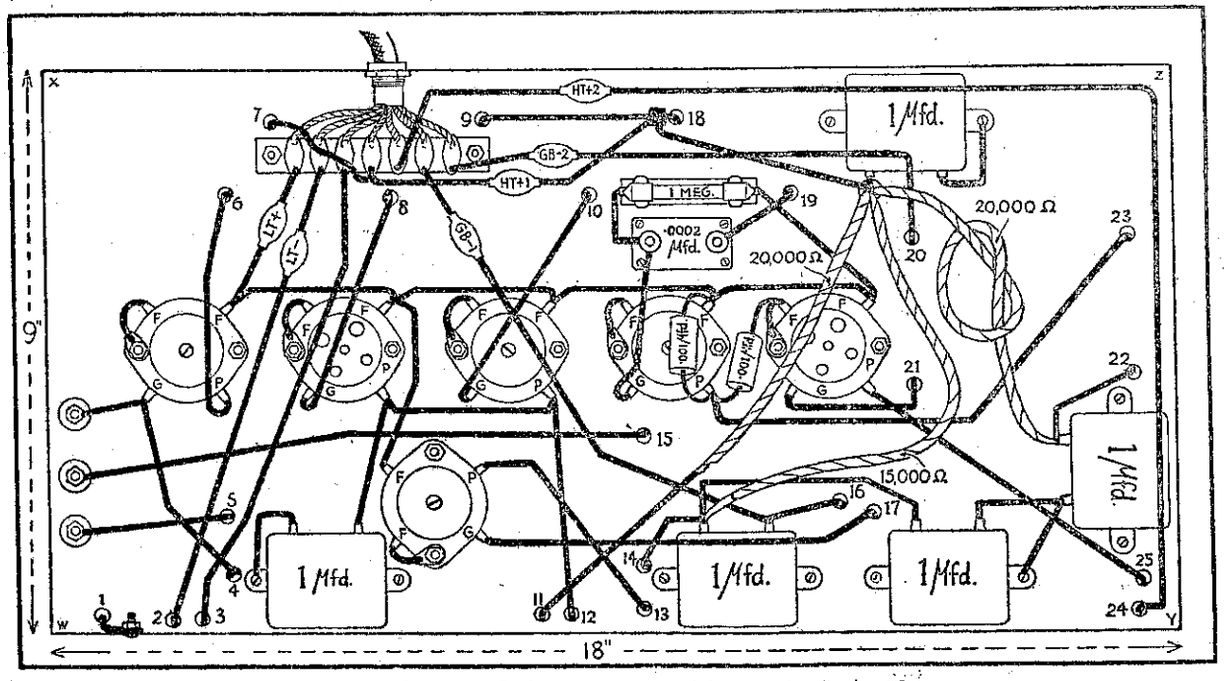
We apologise for this slight error, but would point out that the mishap bears out our often-repeated instructions to always wire from the theoretical diagram. Lay-outs are reproduced just to give an idea of the positioning of components.

We realise, however, that constructors new to the game often find difficulty in following theoretical sketches, and if only these were given they would perhaps be unable to tackle set construction. For their convenience we reproduce this week an under-baseboard wiring diagram, with the values of the spaghetti resistances mentioned before correctly indicated.

Remember, if you notice any discrepancy, always go by the theoretical. This is published on the opposite page.

By the way, reports on this receiver would be particularly appreciated.





The sub-panel layout and the under base wiring of the Super Six.

Jottings

IN practice it has proved so much better to use a grid-leak return to a potentiometer instead of to the filament that this is now standard S.W. practice.

A 10,000 or 20,000-ohm spaghetti resistance in the plate circuit of a short-wave detector instead of an R.F. choke often decreases the tendency to howling.

THRESHOLD howl can often be stopped by placing a .5 megohm or less resistance across the secondary of the audio transformer, though this may make a noticeable reduction in the amplification of the stage.

AN easily-made improvement to many a short-wave set is to place an R.F. choke (or chokes) in one (or both) of the phone leads.

IF you are bothered with mains hum on short-wave work try standing all the batteries on an earthed metal plate.

DO not hang up telephones when not in use against an outer wall, as this intensifies their tendency to rust.

THE little cord near the telephone tags is intended to be fastened down to some immovable part of the set, so that a pull on the cord will not weaken the connections inside it.

WHEN a milliammeter connected in the plate circuit of the last valve kicks to a lower value on a loud passage, it generally means that the grid-bias value is too low.

THE loud hum often heard when attempting to work a pick-up is frequently caused by the pick-up leads in the grid circuit being too long.

WHEN an output or audio valve is not being worked on its maximum "B" voltage, it is sometimes possible to remove overloading distortion by applying all the extra voltage possible and readjusting grid bias to correspond.

DX Topics

(Continued from page 13.)

"This is but one of several powerful stations which have been building in Mexico with United States capital, and which are all, more or less, pirating Canadian and United States waves. One evening recently I listened to no less than four Mexican stations coming through on wavebands which were supposed to be "cleared channels" for Canadian and United States stations.

"Fans who would like to hear XER should have no difficulty in pulling it in at 735 kilocycles, which is a needle-point between the spots at which WSB and CKAC come in. The best time to dial for it is around 11.30 or midnight. The announcers make quite a polite row when they come in between numbers, and they tell you all about their high power and the reports of reception which they are receiving from distant points."

Short-wave News

SHORTWAVE station 12RO. located at Prato Smerado (Rome), Italy, has been heard quite a number of times of late at 5 a.m., operating on their original wavelength of 80 metres. It comes in at good strength and very clearly—quite the best early morning on the air just now.

Interesting tests are being carried out on Sunday evenings by a chain of New Zealand amateurs for stations on the 80-metre band. Six stations are generally in operation, namely:—ZL2AX, Palmerston; 2JX, Lower Hutt; 1FI, Te Puke; 2BE, Hastings; 3CW, Greymouth; and 2FR, Wellington. Considering the small amount of power these stations use, the strength at which they are received is really wonderful. Their percentage of modulation is well up to the standard of A class, B.C.L. stations, and is a great credit to the operators. It will be noticed by the calls of these stations that the tests cover practically the whole of New Zealand (with the exception of the fourth district), and it is interesting to note the relative strengths of all fones as reported from each station. The most consistent station of all six is ZL2AX, Palmerston North.

One of the Hawaiian group of stations was heard on Dec. 8, call KIO, with a special test programme coming in here at R8, but spoilt by an interfering beam station.

Perhaps in the near future we will be tuning our receivers to much higher frequencies, that is, 10 metres or below, and judging from Press reports of late, many radio engineers are concentrating on these frequencies. Some tells us they will be useless as regards transmitting over any great distances. It will be remembered we were told some years ago the same thing about the present short wavelengths but the results so far go to show how penetrating they are. The still higher frequencies may prove to be more penetrating. Some three year sago the General Electric Co. of America carried out tests of 24 hours duration on a wavelength of 10 metres. These tests were received here by me at good strength at certain periods, although fading periods were troublesome.

It will be also noted that the Dutch station PHI, then operating on 16.88 metres, could be heard in New Zealand at far greater strength than stations working on lower frequencies. It is a pity this station had to close. The original tests carried out by Holland and Java some years ago on two-way telephony on high frequencies were very consistent. Two-way contact could always be established. One thing noticeable on low wavelengths is the marked absence of interference. Static and interference from electrical appliances are almost absent. It is also interesting to note the peculiarities of local harmonics in that vicinity. The frequency is never steady, and has a tendency to change, which I think proves even though a station is crystal controlled, etc., frequency has a tendency to move. However, it is not noticed on the fundamental. Could not a few enthusiastic amateurs in New Zealand concentrate more on 10-metre work, and perhaps use a little fore. No doubt the "skip" would be a little troublesome. It would be an interesting experiment, because we have a band of Australian and American hams experimenting in this vicinity. We are well aware of the results of waves of 160, 80, 40, 30, and 20 metres, but we hear very little of 10 metres.

We have also read of late a great deal about reception of European stations on the broadcast band, and many listeners hold verifications from same. I have watched very closely reports of listeners with regard to the number of these stations that have been logged. This started at 5, then 12 and 16, but to cap all, I read a report in "Radio Record" of a listener who had logged 42. Judging from the number and the power used by these stations, the listener who logged 42 is evidently hearing some of the 500-watt Europeans. This is without doubt a record, although I was once ridiculed for reporting reception of a station on the broadcast band located in Madrid. Since then 5SW, Chelmsford, England, has been heard on a crystal set, but have been afraid to report same. All the same, I am quite in agreement with the Palmerston North listener who reported hearing European stations using a one-valve set. It can be done, especially with the new German station.—A. P. Morrison (Wellington).

[Can it?—Ed.]

The Morse Code

Nearing Its Centenary

FEW present-day listeners are sufficiently interested in the Morse code to take the trouble to learn it. Perhaps, too, they are wise in their generation, for the mastering of Morse necessitates the expenditure of no little time and mental energy.

The Morse code is universally used and understood. It is, also, getting well on toward its centenary, and perhaps the surprising fact about it is that it has never been superseded to any extent by any other system. Nowadays, a large proportion of commercial wireless traffic is conducted through the agency of Morse, and particularly through more or less mechanical systems whereby the code is transmitted at very high speeds.

Before Samuel F. B. Morse brought out his famous code, comprising a combination of two sounds varying in duration, crude telegraphic messages were transmitted and received by means of needle instruments, the deflections of one or more needles to one side or the other of an instrument dial making up a code of readable signals.

Morse, however, who started out in life not as a scientist, but as a portrait and scenic painter, gave to the world a new telegraphic instrument — his famous "Sounder"—in which a bar was attracted to and released by an electro-magnet.

It was the noises which this alternate attraction and liberation of the movable bar gave rise to which stirred up in the mind of its inventor the idea of constructing a code based on sound instead of on sight.

It is, indeed, a tribute to Morse's ingenuity that the Morse code of the present day is so little altered from the original code. Morse's code was subjected to International revision in 1851, since which time it has remained unchanged.

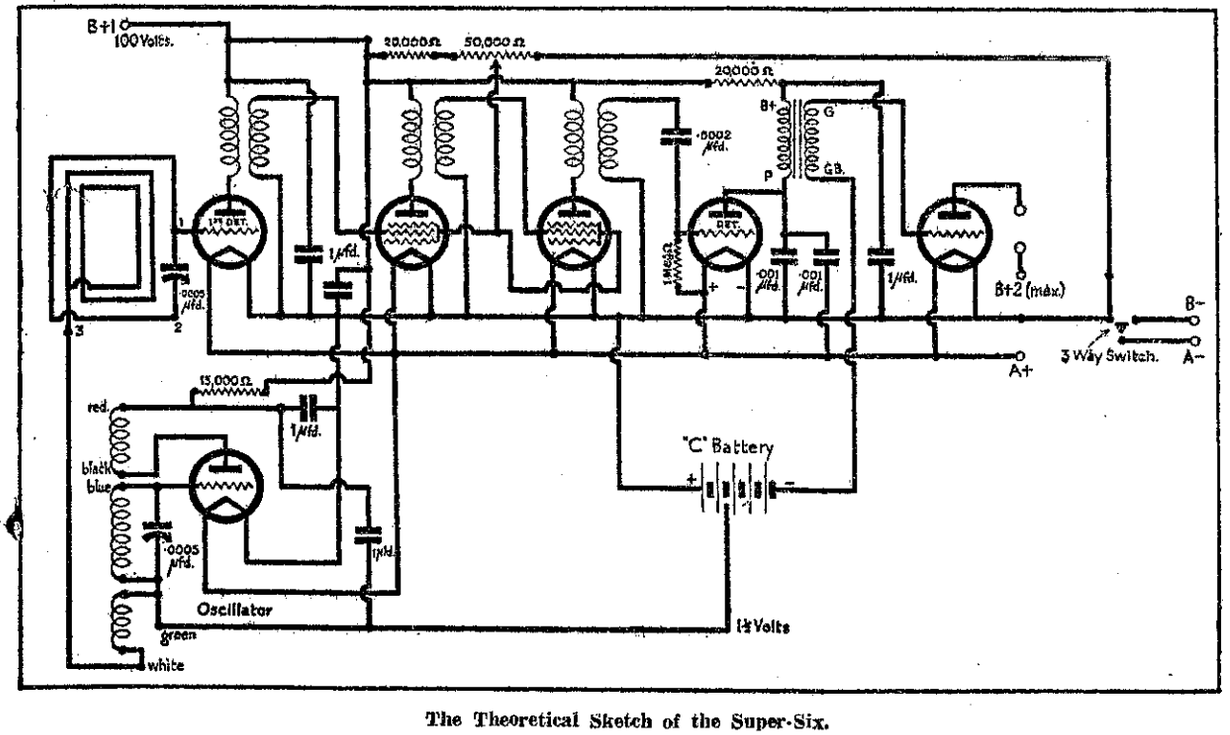
Interchange of Programmes

Between Europe and America

THE Columbia Broadcasting System of America has just completed arrangements for a regular interchange of programmes between the United States and five European countries—England, France, Austria, Hungary, and Czecho-Slovakia—to begin toward the end of this year.

Hitherto the vast majority of transoceanic broadcasts have been from east to west, the United States contributing comparatively little of its broadcasting talent to European countries, but under the terms of the present agreement the exchange programmes will be available on regular channels to both continents, with equal representation in the number of programmes transmitted. In addition, the Columbia Broadcasting System has made arrangements to broadcast in the United States the proceedings of the International Disarmament Conference to be held at Geneva next February.

The president of the Columbia network, who recently made an extensive tour through several European countries, said: "We shall endeavour to present to audiences both here and abroad the typical music, drama, and literature of each country—in fact, everything in art that can be broadcast—and in the intellectual sphere we shall introduce the best thinkers of the participating nations. . . . I anticipate no difficulty in securing appearances before the microphone of prominent European statesmen. They will give us particularly valuable intimate, first-hand accounts of international problems as they affect their respective peoples."



The Theoretical Sketch of the Super-Six.

How Wireless Began

(Continued from page 19.)

and the telegraphic broadcast was then taken over first by Clifden, then Carnarvon, then Leafield, and is now sent out from Rugby. It was about 1906 that my company put up a proposal to the British Post Office that they should be allowed to broadcast news to all the newspapers in the country. However, this was not agreed to.

Returning now to a consideration of the general progress in wireless telephony, at the time of Fessenden's 1906 tests, while I was personally very much occupied in improving my transatlantic stations at Clifden and Glace Bay, Nova Scotia, Captain H. J. Round, one of my assistants, had a small arc transmitter working near the battery in New York, from which speech and phonograph records were transmitted to various places in New York, including the "Times" building and ships lying in the docks. There were, of course, no valve amplifiers in existence at that date, and for best results the microphone was connected in the aerial circuit. In order to use power in the aerial heavy current microphones were required. The best of these were the liquid microphones of Q. Majorana and G. Vanni. Employing arc transmitters Majorana was able to transmit in 1908 from Rome to Sicily, a distance of 300 miles, and Vanni, in 1912, communicated from Rome to Tripoli, a distance of 600 miles. The invention of the Fleming valve in 1904 and the three-electrode valve of Lee de Forest in 1907 enabled the disability which had delayed the commercial development of wireless telephony to be removed, and the present state of the art to be realised.

As was to be expected, with the new system early results were obtained working over short distances. It was in June, 1913, that Dr. Meissner employed the oscillating valve for the first time as carrier wave generator for transmitting speech between Berlin and Nauen, a distance of 23 miles.

My first tests with a valve generator were made in the following year. In March, 1914, I had the apparatus installed on an Italian warship at Augusta in Sicily, and speech was received on a second vessel. The two ships steamed out on to the high seas for further tests off the Sicilian coast, and consistently perfect reception was registered over a distance of 35 kilometres, a distance subsequently increased to 70 kilometres, with very limited power. Communication was constantly maintained throughout a period of 12 hours, the experiments including periods when signals were transmitted entirely over sea and also when land intervened. One complete wireless installation was also sent to New York and communication was established between New York and Philadelphia by telephone working both ways.

On the outbreak of war, experiments in wireless telephony were discontinued commercially and were carried out only in connection with the military services, as far as this country was concerned; but in America commercial research continued, and at the end of 1915 the American Telephone and Telegraph Co., working in conjunction with the Western Electric Co., succeeded, when conditions were favourable, in transmitting speech from the U.S. naval station at Arlington to the Eiffel Tower Station, Paris, a distance of 3500 miles. Over 300 valves were used in the oscillator and modulator circuits.

On the conclusion of the War it became possible for European countries to resume their tests; and in March, 1919, with the object of demonstrating that trans-Atlantic telephony could be achieved using comparatively small power, one-way communication was established and satisfactorily maintained for ten days with Louisburg, Canada, by transmission from my station at Ballybunion, Ireland, using a valve transmitter with only 2.5 kw. output from the generator, a wavelength of 3800 metres and an aerial 500 feet in height.

In the same year my assistant, Mr. C. S. Franklin, carried out a short-wave telephony Beam test on 15 m. across the Irish sea, a distance of 80 miles, and work on this wavelength was continued in 1921, when two-way telephone communication was established between Hendon and Birmingham, a distance of 97 miles, using reflectors.

Then, in 1920-21, following a successful test of duplex telephony on 100 m. between Chelmsford and Southend, experimental stations were erected by my engineers at Southwold and Zandfoort, Holland, which worked duplex across the North Sea with 1 kw. to the aerial on 100 m. At Christiansund, Norway, good quality telephony was received from these stations both at night and during the day time; while at Oslo, a distance of 700 miles, very loud and constant signals were received during the night, but the day reception was reported variable.

The year 1920 is memorable for a number of important wireless telephone transmissions which had both news and entertainment value, and thus had the same character that broadcasting has to-day. To encourage public interest, demonstrations were given to show that no special skill was required to talk into the telephone and that musical items could be transmitted and satisfactorily received. In February, 1920, a programme of vocal and instrumental music for two half-hourly periods each day for a fortnight was broadcast from my Chelmsford station using about 5 kw. in the aerial, and the same wavelength of 2800 m. which was being employed by Poldhu for the news broadcast to ships. This was in order to test the range of the transmitter. Amateurs and the shipping companies were advised and asked to send in reports. Dame Nellie Melba gave her first broadcast in June, 1920, from this station, and Lauritz Melchior in July. World-wide interest was aroused by these broadcast concerts and good reception was reported from distances as far away as Persia and Canada. In November, 1920, the Westinghouse Electric and Manufacturing Company, having given due notice beforehand, broadcast the returns of President Harding's election from their Pittsburg station as they came to hand. Many thousands of people were ready with receivers, and when the results came through they were thus able to anticipate the newspapers.

A recent photograph of Senatore Marchese G. Marconi.

This caused a great sensation. During the year 1921, amateurs and the commercial interests in the United States erected broadcast stations in considerable numbers, and the public demand for receivers grew at an extremely rapid rate, resulting later in an enormous development of broadcasting in the United States.

I cannot detail here all the steps which put British broadcasting finally on a permanent basis; it is sufficient to say that in order to satisfy the experimental needs of the British amateur the Postmaster-General finally agreed, in 1922, to a limited service of vocal and gramophone selections and calibration signals being sent out from my company's station at Writtle. The movement begun on this basis rapidly became a popular one in which the non-technical listener who required to be interested or amused by news or music predominated, and his needs are certainly well catered for to-day.

Commercial telephony is satisfied with intelligibility and a hand or wall microphone; but for the transmission of music and broadcasts from groups of artists nothing less than true reproduction and a microphone that can pick up the variations of sound at a distance and yet reject mechanical vibrations is demanded. This has led to intensive development in studio design and equipment, the first efforts in this direction being applied at the original 2LO station at Marconi House, opened in November, 1922, and later, with great thoroughness, at the new studios, when 2LO was removed to the headquarters of the British Broadcasting Corporation at Savoy Hill.

I understand that the elaborate and comprehensive equipment of the future home of British broadcasting at Langham Place, London, leaves nothing to be desired, and I am convinced that under the able direction of Sir John Reith the British Broadcasting Corporation will worthily maintain its recognised position as the leading broadcasting organisation.

At one time it was a stock argument against the use of wireless that messages sent by this means could be picked up in all directions. This characteristic, however, has made it an ideal method for communicating with moving objects such as ships at sea or aeroplanes in flight, and with the advent of broadcasting this widespread radiation has became a most valuable feature.

There are, however, many services for which a more confined channel has distinct advantages, and this requirement, I am glad to say, is effectively met by my Beam system, by means of which signals can be concentrated and directed in any desired direction and the power necessary is reduced to a minimum. Directional or Beam wireless transmission has made world-wide telephony possible, and to-day we can speak to our friends at the ends of the earth or on ships at sea wherever they may be, and recognise with the pleasure of personal contact the familiar intonations of their voices.

On May 30, 1924, I was able to speak from Poldhu to Sydney, thus conveying intelligible speech from England to Australia for the first time, and last year, when on board my yacht Elettra in the Mediterranean, utilising one of our small ship wireless telephone installations, I again spoke whenever I wished to do so to friends in Australia over a distance of 9000 miles. I also spoke to others in London, Buenos Aires, Rio de Janeiro, New York, Montreal and Capetown, a range covering practically the whole world.

The great need of the present day is for a better understanding between men and nations, and this understanding can be fostered and helped by improvements in our communications. The most direct and satisfying means of communication between men is the spoken word. In this respect, broadcast telephony occupies a unique position as being the most potent means for the instantaneous and universal dissemination of information, instruction and entertainment that the world has ever known.

I am happy if by any efforts of mine I have been able to make some contribution towards international sympathy and understanding.

NEVER "short-circuit" grid-bias battery leads, for this can be much more harmful than disconnecting a G.B. plug when a valve is working.

DO not readjust your crystal more often than you need, as not only is this bad for the crystal but it often interferes with neighbours' reception.

AN ordinary R.F. choke inserted in the negative lead from a "B" eliminator is often efficacious in getting rid of hum or distortion.

Short-wave Notes

Better Empire Programmes.

THE following notes in reference to G5SW are from a recent issue of "Wireless World" (England): "It is a good sign that the B.B.C. has decided to enliven the Empire broadcasts from 5SW by including some of the London Regional items. Up till now Empire listeners have had to content themselves with transmissions of 5XX or, alternatively, to tune in foreign short-wave stations, but as from Monday last (November 2), the B.B.C. are from time to time selecting regional items for relaying overseas.

Cutting Out Silences.

"This new development is in response to requests received not only from Britishers, but from quite a number of American listeners, who evidently take a keen interest in the British programmes. The scheme will mean the abolition of those periods of callous silence during which our cousins overseas have had to stand by while the home news bulletins were being read. Now they will at least have an anaesthetic in the form of music.

Empire Broadcasting Developments?

"By the way, it is quite on the cards that the National Government will seize upon the Imperial broadcasting system as an ideal means of furthering unity of outlook throughout the Empire. At all events, it would be unwise to conclude that, because economy is in the air, the anti-luxury axe will fall on 5SW. The indications are quite different.

A Mystery.

"It is a great pity, I think, that 5SW closed down at 9 p.m. on Wednesday last. Not a single election result was allowed to filter through. Why? The laws of the Medes and Persians were more elastic than our modern laws of copyright."

Log for Week Ended December 26

Conditions are still far from good, but there is usually something to be heard.

RV15, Siberia, 50 metres.—Not quite so strong again; also plenty of static.

PMY, Java, 58 metres.—Thursday, at 12 p.m., R8-9 with records; excellent except for static.

HVJ, Vatican City, 50.26 metres—About R8 at 7 a.m., not so loud as a few weeks ago, but the quality is as good.

RV59, Moscow, 50 metres.—Volume is best about 7 a.m., but is seldom as loud now as it used to be. Wednesday was an exception, when they were R9 at 6.45 a.m.

50 Metres (about).—Saturday, 6.10 a.m., music similar to that which is heard from Saigon at R9. This music was coming in on exactly the same wavelength as RV59, talk from the Russian being audible (R8) through the music. Any chance of getting a call from the stranger was spoilt by RV59.

W9XF, Chicago, 49.83 metres: Tuesday and Saturday, R7 at 5 p.m., but too noisy to bother with.

ZL2ZX, Wellington, 49.5 metres: Excellent every evening they were on.

W8XAL, Cincinnati, 49.5 metres: Sunday and Saturday, R8 at 5 p.m., but too noisy.

W3XAL, Boundbrook, 49.18 metres: Quite good after 5 p.m., reaching R9 as a rule by 5.30 p.m. On Saturday music from the Mount Royal Hotel, Montreal, was heard till 5.30 p.m. They announced earlier in the week that they would be on the air on Christmas Day from 6 a.m. till 1 a.m. the following morning. During this period several relays were to be broadcast, including the Canadian one heard and one from England, which was at about 6 a.m. here, when W3XAL is not audible in New Zealand.

F31CD, Saigon, 49 metres: Still good from about 11.15 p.m.

W3XL, Boundbrook, 46.69 metres: Sunday, R4 at 4.45 p.m., increasing to R8-9 by 5.30 p.m. Static was very bad.

REN, Moscow, 45.38 metres: R8 at 6 a.m., slowly becoming weaker till they disappeared soon after 7 a.m., as is usual with this station now.

PLW, Java, 31.86 metres: Thursday, soon after midnight, excellent with records at R9.

VK3ME, Melbourne, 31.55 metres: Wednesday from 10 p.m., R9.

W2XAF, Schenectady, 31.48 metres: Varies quite a lot. Tuesday they were only just audible at their best. Wednesday was better, being R7 when closing at 4 p.m., while on Saturday R8-9 was reached by closing down time. On Saturday morning at 8.10 a.m. they were R9 for about five minutes, when 2XAF suddenly disappeared. It is unusual to hear this station above a mere whisper at this time of the day.

Zeesen, Germany, 31.38 metres: This station is gradually strengthening in the morning now. The best morning was Monday, when signals were R8 at 7 a.m.

WIXAZ, Springfield, 31.35 metres: Sunday, organ recital, reaching R8 by closing time at 5.30 p.m. On Thursday they were on until 6.25 p.m. with music and Christmas messages to residents of the Far North from their friends in U.S.A. and Canada. Volume reached R9.

VK2ME, Sydney, 31.28 metres: R9 with severe fading as usual on Sunday evening.

G5SW, Chelmsford, 25.53 metres: The mornings are still very poor, weak and gushy. The midnight session is better. On Thursday night, or at least Friday morning at 12.25 a.m., the opening announcement with the next day's — Christmas — programme was 100 per cent. readable at R9. There was a slight rapid fade, but nothing to worry about. An organ recital was heard till 12.45 a.m.

12RO, Rome, 25.4 metres: Only heard twice during the week. Thursday, R4 at 8 a.m., was not audible at 7 a.m. Saturday was the same.

W8XK, Pittsburgh, 25.25 metres: Sunday only. R4 at 4.30 p.m., with messages for the Far North.

FYA, Paris, 25.2 metres: Quite weak each morning, with rapid fading.

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.

N.Z. Short-wave Club

The Secretary's Letter

I WISH to acknowledge the large number of Christmas greeting letters, cards and telegrams, all of which I heartily reciprocate.

Mr. R. Lockerbee, who is away in charge of a camp, intends to try out reception in the open and will, we hope, have an interesting report on his return.

Mr. L. Saunders writes from Auckland that he has made a four-valve screen-grid set. Judging from the results he had with a small set when in Wellington, I expect to receive a big budget of news very soon.

Newcomers to shortwave need not expect to be surprised at anything they hear. The other night, close handy to 50 metres, 2UW, Sydney, was coming in quite plainly. At one time a number of harmonics could be heard in that vicinity, greatly to the concern of ardent hunters, who could be heard tuning in to the harmonics.

In writing in, many beginners tell me that they are building a big set and find trouble. Why not start on a one or a two-valver and tinker around with it? Much valuable experience will be gained that way and the parts can be used again for a larger set.

Mr. Hugh Millward, NZ27W, of Wanganui, writes that he passed his exam. and is now on the air with a power of about 3 watts under the call ZL2KN, and would appreciate reports. Early in the year 27W did great work with a two-valver and had a special article in VE9CL's bulletin about his dxing.

Address all correspondence: A. B. McDonagh, Secretary, N.Z. Shortwave Club, 274 Cuba Street, Wellington. Wishing all readers the best of reception for 1932,—Yours fraternally, Mac.

Shortwave Jottings

International Programmes.

EACH Sunday, station W9XAA, who is now broadcasting on25.43 m., transmits a regular programme sponsored by "The Century of Progress Exposition." Each programme is dedicated to a different part of the world, in an endeavour to foster international friendship, and to give publicity to the Exposition, which will be held next year in Chicago. These transmissions may be picked up in New Zealand at 9 pm. to 11 p.m. each Monday.

Two Often-heard Canadians.

STATION VE9GW, which has been reported by many of late, is now broadcasting regularly on 25.43 m. It is located at Bowmanville, Ontario, Canada. They wish to know if they are heard better on this wavelength than on 49.22 m., and would appreciate reports.

"Radiodifusora Nacional."

EVIDENTLY encouraged by the success of "Little NRH" and other well-known Central American stations, the Government of Gautemala is building an experimental shortwaver in the capital city. It has the call letters TGW, and is known as "Radiodifusora Nacional." At present a frequency of 6675 k.c. (44.94 m.) is being used with a power of 100 watts. Schedule on this frequency is from 1 up to 3.30 p.m. A frequency of 10,715 k.c. will be used for daylight work, but no definite schedule for this wave is to hand.

Reports should be addressed to: "Telegrafos Y Telefonos Nacionales, Seccion de Radio, Gautemala City, Gautemala, Central America."

...With... BOOK and VERSE

By "John O'Dreams"

Jottings

NOT for nervous maidens, if there are any nowadays, nor convalescent patients at twelve midnight, is "Men in Darkness." The author, Mr. James Hanley, is rapidly winning his literary spurs, and in these tales of the sea and seafarers he displays exceptional skill and imaginative force. They are terrible tales, however, in which horror is piled upon horror; and calculated to disturb the phlegm of the most stony-hearted is the uncompromising revelation of raging cruelty and a fierce and fatal destiny. The stark realism brings shudders in its train, and this is not a cheerful volume to take with one on a week-end by the sea. Nevertheless it is a powerful and original contribution to contemporary fiction.

* * *

IN "The Life of a Mogul Princess," through the diary of a Mogul princess of the seventeenth century, Jahanara, daughter of Shah Jahan, who built the Taj Mahal for his queen, Madame Butenschon, has told the story of the breaking-up of the Great Mogul Empire. The terrible history of Shah Jahan's sons, who, banished to distant provinces for fear of their ambition, rose against their father and against each other, and the history of the princess who lived to see her father imprisoned, her favourite brother slain, and her house ruined are here related, while through the dark chronicle runs a passionate Eastern love-story—exotic as the heavy perfume of a summer night. The high-flown language and the descriptions of scenery are in keeping with the exquisitely fantastic reproductions of Mogul miniatures that decorate these pages. Mr. Laurence Binyon has written an introduction.

* * *

ORIGINALITY is the impression left by Mr. Maurice Richardson's novel, "A Strong Man Needed." This extravaganza tells the story of an American female Samson, who, beside being 9 feet high, has a sound knowledge of how to use her far from gentle fists. Intrigued by an impecunious English nobleman, she proceeds to retrieve his financial fortunes by achieving fame and shekels as the heavyweight champion of the world, assisted therein by a merry motley of minor characters. Entirely absurd it all is, and the most diverting book of the month, with the marriage in the fighting ring, the party at the Macgillivrays' habitation, and the chatter of the rag, tag and bobtail who scamper through the pages. Mr. Richardson has proved himself an irresistible humorist, and we are grateful for his quota of gaiety in a dullish world.

Our Fortnightly Book Review

The Irish Beauties

By E. Barrington.

THIS is the last of the romantic historical novels of the author who used the pseudonym of E. Barrington, and it is quite up to the standard set by "The Divine Lady" and "The Exquisite Perdita." "The Irish Beauties" is the tale of the luck of the beautiful Miss Gunnings, and of how their loveliness ravished the great world of London.

Beginning life in a poverty-stricken tenement in a Dublin slum, the first step of their meteoric passage to fame and fortune was taken through the kind offices of Mrs. George Anne Bellamy, a play-actress of elastic ethical code and the generosity of heart that sometimes accompanies it. Through her warm heart and unaffected appreciation of the beauteous Elizabeth, the two Miss Gunnings make entrance into Dublin society, attract attention of the Lord-Lieutenant of Ireland, who gives them letters to the most exclusive society in London, whither they wend their triumphant course. Maria, "a sweet rogue with hair like red gold and eyes like a blue June morning," and Elizabeth, who "was perfection's self, and sure the Lord was well pleased the day He made her," storm the most exclusive social citadels, and assuredly for the younger at any rate, her face was her fortune, as the event proved.

In the salon of Lady Caroline Petersham, the Irish beauties meet the wittiest and most renowned and brilliant figures of the England of that day. There was to be seen "the attentuated elegance known as Mr. Horace Walpole, who was quick-witted, fastidious, a dilettante author with ambition of an Alexander Pope, a past master in fashionable diplomacy, nimble in retort as the thrust of a rapier, faithful to a few friends, though seeing their weaknesses with the half contempt, half tolerance of the true cynic." And the great Duke of Hamilton. "A man of thirty with an air of gravity under his laughter. More manly than handsome, and of all the matches in the Three Kingdoms, James Hamilton was the greatest available. Duke of Brandon in England, of Chatelherault in France, of Hamilton in Scotland, a kind of triple divinity before whom no incense was too much to burn, no maiden sacrifice too pure and delicate to be offered. Of vast possessions and gallant presence, no princess need have disdained his name."

The youthful, lovely Elizabeth Gunning attracted the Duke's cynical regard. His knowledge was women was vast, but it had not included the girlish purity and pride that were a part of her nature, as well as its sweetness. His pursuit of his quarry is described, but at long last he finds that she holds his heart, and the proudest Duke in Britain kneels at her feet and thus woos his future Duchess. "If I were James Hamilton, no more? With a shieling on the moors, the heathercock for food, and a Hamilton plaid to wrap his heart's darling in; a fire of peats to sit by, and his hand empty but for love and his claymore—would the beauty of the world come to his breast?" And the beauty of the world could not resist that manly, simple wooing, and then and there the impetuous Hamilton married his lovely bride, and the fortune of the impecunious Gunnings was made.

There is much witty persiflage in the telling of the tale, famous figures flit through the pages, and Horace Walpole tells his stories to the scandal-loving, fan-flicking fine ladies of his court. "I dined with good old Mrs. Horton t'other night, being obliged to come in breeches and spattered boots, for which I was profuse in apology. Says she, with a curtsey of the reign of George the First: 'Apologise not, sir, for your costume is a pleasure. I can see the gentleman through a pair of buckskin breeches as well as through silk or satin!"

And there are famous parties at Strawberry Hill, thronged with fashion, frivolity and finery; the whole told with the romantic grace and wealth of detail which the author has made her own.

THERE are still some people, one supposes, who remember the delight with which they read those fine and outspoken studies of psychology and contemporary society entitled "The Wages of Sin" and "Sir Richard Calmady." In those days those novels were considered very daring indeed, and the author, the late "Lucas Malet" (the pseudonym adopted by the daughter of Charles Kingsley), greatly criticised for what was in those days a somewhat shockingly unconventional outlook. Frank, intimate, brilliantly incisive, the novels were memorable for their intense human interest, and might with advantage be resuscitated from the limbo of the forgotten, for in acute analysis of motive and sympathetic comprehension of the reaction of individuals to the bludgeonings of fate, they are miles ahead of many of the inept and frothy lucubrations turned out by some women writers of the present era.

Journey's End

"Journeys end in lovers' meeting . . . ."
True, I thought, and Youth is fleeting,
So swift I fared, with heart a-beating,
Forth—seeking love.
But no lover came to meet me,
Take my hand, caress or greet me,
So, heart-broken, I did fleet me
Home—as the dove.
But lo! as sad I neared my dwelling,
One there I saw, my heart rose, welling
With wondrous surge there was no quelling. . . .
I had found Love.

—"Smilax."

Treating Stained Cloths

STAINED cloths which have been treated with salts of lemon or any other acid should always be rinsed in water to which a little ammonia has been added. This neutralises the after-effect of the acid and makes the material less likely to rot.

Panorama.

HIGH noon, femininity fluttering on the Quay, squeakers abroad in the land, balloons briefly gay over bright curls of children. The Old Year wanes to a close, and pathetic vendors of paper flowers and strange beasts make frantic appeals to purchasers of rubbishing wares. A boy of thirteen or so, threadbare, neat and eager, keeps up breathless, insistent patter. "Here y'are, lydy. Screw 'em tight as tight, and they'll go up like 'Inkler!" he reiterates, as he thrusts forward a painted monster the like of which has never flown o'er land or sea.

A forlorn derelict, with bulging boots and ravaged face, hammers out on wheezing hurdy-gurdy, "Christians, awake! Salute the Happy Morn," with a tragic irony affecting to the most obtuse. With the shamefacedness of Britain bestowing largesse in bright light that beats upon public philanthropy, we drop in a coin, and are glad of gleam of silver content amid much dull brown in ragged cap that serves as temporary treasure-chest.

Comes a portly matron of fifty summers, clad in pink organdie and a nearly-ermine necktie that has seen better days. "I sez to Bill," she loudly declaims to plethoric friend, "I don't 'old with this 'ere Christmas business. 'Meals as usual,' sez I, no better and no worse. Wot's Christmas done for Bill and me!" And thus belligerently dismisses the Hope of the World, the greatest anniversary of Christendom.

Under the War Memorial, a limping veteran, with a tanned, lined face, stops for a moment to buy some oranges. "For my pal. He's dying over there." He tells the aloof Assyrian, who proffers no word of sympathy, but hands him the fruit in profound silence of an alien race. "Together at Gallipoli!" says the man, oblivious to lack of response, as his wistful eyes stray "over there" where his comrade is fighting a losing battle.

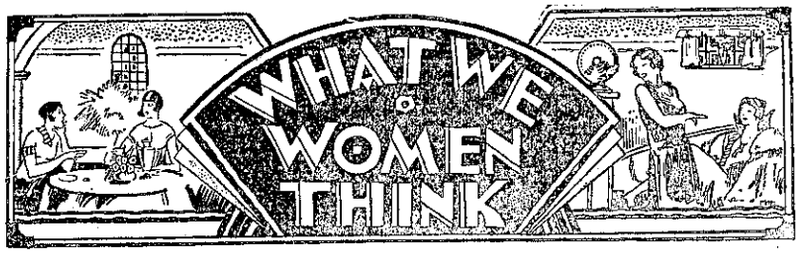
Heading for home, we buy a paper from local Adam of Dublin, who stifles raucous yells, and with a touch of the brogue renders thanks for recurrent generosity. The long shadows stretch around us, a solitary sandwich man wanders past, the sad year is going, going, almost gone; and over the horizon glimmer sails of the ship of good hope freighted it may be with fulfillment of gallant endeavour, reconciliation of clashing issues, balancing of the budget; perchance a peace that passes understanding, heart's happiness in this world or the next.

The year is a fresh beginning,
My soul, to the glad refrain—
And in spite of old sorrow and older sinning,
Take heart with the year and begin again.

—H.V.L.

The Right Stuff.

THERE are few women in modern public life more respected than Miss Eleanor Rathbone, whose return at the head of the poll for the Combined English Universities is one of the minor sensations of the general election. So few of the women in the late Parliament have been returned, and Miss Rathbone, of course, stood as an Independent—one cannot imagine her as anything else! She has a magnificent record of public service, which began when she came down from Somerville College, Oxford, and was the first woman to be elected to the Liverpool City Council. Miss Ellen Wilkinson once rather flippantly described Miss Rathbone as "looking what she is, a great public institution." She has a fine, strong face, beautiful eyes, a clear, forceful mind, and a telling voice, well suited to the House of Commons.



To ---

You ask me, dear, to sing a song for you,
But where is muse to voice my thoughts so true
Of one who skyward soars as bird on wing,
Too high above to hear the song I'd sing?

Yet, though I cannot reach you 'midst the spheres,
Still melodies of night rise to your ears,
And soft winds sigh the age-old song of sea. . . .
These, and my silence, dearest, speak for me.

—*W.H.M.*

In Glass Houses.

ROOMS almost entirely furnished in glass, with glass-covered walls, have been produced by Lalique, whose amber-coloured dining-room with a solid glass dinner table, will linger in the memory of all who have seen it. Very beautiful effects achieved by plate-glass, backed with silvered plaster or embossed lead paper, have been shown also by this master. Moulded panels of glass, set in a framework of steel, have also been used by Lalique in a variety of ways. Last year he made a set of altar rails for a church, with three panels consisting of long glass strips, decorated with a deign of lilies; while his great glass fountain, with eight panels of figures in high relief and seventeen cascades, was one of the points of interest of the Paris Exhibition of 1925.

Glass statuary and moulded glass mascots and vases have travelled far since that time. Alterations of transparent and opaque rectangles of glass of elegant and novel proportions are among the decorative glazing effects in buildings of modern design, as well as the heavy engraved glass panels, so charmingly used, set in wooden glazing bars. A shop in Bond Street has walls and pillars entirely covered in mirror glass, in square or long-shaped panels of rather small size, the whole effect being gay and glittering and an admirable background for flowers, scents and feminine frivolities. Copper-coloured mirror glass is used in the same way in a tearoom in Piccadilly. It might well be copied in the bathroom of some private house, with a steel ceiling in contrast with the copper-lustre of the walls.

Great glass jars as lamp standards, flower vases, with moulded or cut decoration, glass wall-sconces and chandeliers, powder bowls, trinket sets and writing sets of the same material, are no new departure, though their decoration and design are new in manner and are now carried out by new methods.

Hints for the Housewife

ODOURS such as those caused by medicine, vinegar, and so on, can be removed from bottles by half-filling them with cold water, plus a tablespoonful of mustard. Shake vigorously, let stand for half an hour, and rinse thoroughly with clear water.

QUILLS, which are used a great deal for trimming the new hats, can be bent to any desired shape by holding in the steam from a kettle of boiling water until flexible and then bending with the fingers.

RUGS will not curl up at the edges if a triangular piece of corrugated rubber is sewn to the underside of each corner. The rubber, which can be bought from most ironmongery stores, should have holes punched in it to allow the needle to pass through easily.

MOTOR oil and tar stains on clothing will disappear if the part affected is placed in olive oil and allowed to soak overnight. Wash next day in the usual way.

WHITE fox furs can be cleaned at home with powdered starch. Rub the starch in with a piece of clean flannel, taking care to stroke the way of the fur. Shake, and finally brush out the starch with a clean clothes brush. If possible, always keep the fur in a box or drawer lined with blue tissue paper to preserve its whiteness.

VEGETABLES that have become stale or frostbitten can be freshened by soaking for two or three hours before cooking in very cold water to which a teaspoonful of bicarbonate of soda has been added.

Praise! Oh, Dear, No!

LET the following anecdote be a lesson to all who remain inhumanly silent. It appeared that the Duke of Wellington once requested a great connoisseur, one of the finest judges of cooking in Europe, to find him a chef. Felix, whom the late Lord Seaford was reluctantly about to part with on economical grounds, was recommended and received.

Some months afterward his patron was dining with Lord Seaford, and, before the first course was over, he observed, "So you have got the Duke's cook to dress your dinner."

"I have got Felix," replied Lord S., "but he is no longer the duke's cook. The poor fellow came to me, with tears in his eyes, and begged me to take him back again at reduced wages, or no wages at all, for he was determined not to remain at Apsley House. 'Has the Duke been finding fault?" said I. 'Oh, no, my lord. I would stay if he had; he is the kindest and most liberal of masters. But I serve him a dinner that would make Ude or Francatelli burst with envy, and he says nothing. I serve him a dinner dressed, and badly dressed, by the cook maid, and he says nothing. I cannot live with such a master if he was a hundred times a hero!'"

Lovely Laces.

WE have grown accustomed to all sorts of lovely colours in laces, but the latest idea of coarse and fine wool-laces in black, white, and every bright shade is most effective for sports clothes yokes, blouses, cardigans, and even delightful evening frocks. The Nottingham industry is appreciably assisted by this practical winter vogue.

A most successful contrast in sports clothes is so easily attained. A dark brown or deep purple flannel frock is cheered by a yoke and under-sleeves of beige, or pale mauve wool-lace. This is effective in either a coarse or fine design. Nothing is smarter than a dark green wool suit, with blouse of fine wool-lace in tender tones of pale greens and blue. A house frock, composed of a coarse dark green wool-lace carried out a daffodil shading by a yoke and sleeves in two tones of finely-meshed lace in pale yellow wool. A girlish gown for the evening, that looked like the finest Shetland shawl, elegantly draped, was in palest pink, with a contrasting fichu-like berthe of a deep apricot in a slightly coarse design.

The Crisis Club.

MISS ROSALIND NORMAN, the daughter of Sir Henry and Lady Norman, is one of the leaders of a group forming the English Crisis Club, which has not any premises but is merely a band of young people, all of whom are friends, having, for the object of their venture, a reduction in the cost of amusement and recreation as well as in the arranging of certain charitable enterprises.

Parties arranged by members of this club must not cost more than 3/6 a head, and if a theatre or cinema party is the object in view, seats in the pit or other cheap part of the house must be chosen. As Miss Norman says, husbands, brothers, fathers, and sweethearts need some amusement in the evening, but why should it cost so much?

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