

THE RADIO RECORD

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WELLINGTON, FRIDAY, FEBRUARY 8, 1929.

Broadcast of Shakespearean Performance

YET another historic broadcast event by 2YA, Wellington, is announced to take place. On the evening of Friday, February 8, for the first time in New Zealand, scenes from Shakespeare, performed by a professional theatrical company, will be broadcast direct from the stage during the actual enactment before an audience. The broadcast by 2YA, Wellington, will be picked up by 3YA, Christchurch, which station will re-broadcast the performance. It is estimated that, making a reasonable allowance for the number of people listening in at each licensee's home, more than 80,000 people will hear this historical broadcast.

MANY thousand listeners throughout New Zealand will be interested in the news that the Radio Broadcasting Company have made arrangements with Mr. Allan Wilkie, C.B.E., the eminent actor-manager of the Allan Wilkie Shakespearean Company, to broadcast three scenes from the public performance of "The Merry Wives of Windsor," one of the most popular of Shakespeare's 37 plays. The programme of 2YA, Wellington, which has already been compiled for this evening, will be interrupted twice to cross over to the stage of the Grand Opera House, Wellington, where "The Merry Wives of Windsor" will be in progress of enactment by the Allan Wilkie Shakespearean Company.

At 8.35 p.m. (approximately) the delightful "letter-reading scene" by the "merry wives" will be picked up by the microphone and put on the air by 2YA, Wellington. Again at 9.50 p.m. (approximately) the microphone will lend its ear to the Garter Inn scene in which the roguish old Sir John Falstaff describes to Ford (disguised as one, Brook) his first experience when he was carried away in the buck-basket after wooing Mistress Ford. This will be followed immediately by the second adventure of Falstaff in his wooing of Mistress Ford.

THE three scenes to the broadcast are self-contained in a sense that they involve episodes which, though detached from the play for the purpose of broadcasting, are, nevertheless, sufficiently complete in themselves as to be readily understood and enjoyed.

Mr. Allan Wilkie will play the part of Sir John Falstaff—a role which he has so successfully interpreted as to be widely acclaimed by Press and public throughout



Mr. Allan Wilkie, whose Shakespearean performances are the first to be broadcast in the Dominion.

Australia and New Zealand. Miss Hunter-Watts, Mr. Wilkie's talented leading lady, will appear as Mistress Ford, a part she graces with inimitable skill. Miss Lorna Forbes will impersonate Mistress Page.

As Ford himself, and also disguised as Brook, Mr. Alexander Marsh, the gifted English actor who has lately joined Mr. Wilkie's company, gives a particularly fine performance.

"The Merry Wives of Windsor," which Warton describes as "the most complete specimen of Shakespeare's comic power," possesses the distinction of having been written by desire of a monarch, for it is stated that Queen Elizabeth expressly requested Shakespeare to write a play portraying Falstaff in love. Falstaff, it must be remembered, had been previously witnessed as a character in Shakespeare's "Henry the Fourth" where the old knight is represented as the boon-companion of Henry, Prince of Wales; a soldier, fat, witty, boastful, mendacious and sensual to a degree. The Falstaff of "Henry the Fourth" was, therefore, a fit subject for mirth when engaged in love with two ladies whose sole object in pretending to encourage his advances was to punish him for his insolent assurance. This is the Falstaff we laugh at in "The Merry Wives of Windsor." He is in love with both Mistress Ford and Mistress Page ("the merry wives") to each of whom he sends a letter with the same wording. The ladies pretend to encourage his suit only to submit him to most unenviable ordeals. Mrs. Ford's husband becomes needlessly and very furiously jealous of Falstaff, with whom he suspects his wife is seriously intriguing. It is in the Garter Inn scene that Ford appears in disguise as one, Master Brook, and in order to discover Falstaff's mendacity proposes a scheme to the old knight to test

—Continued on p. 2.

Shakespearean Broadcast

(Continuation of Front Page.)

the integrity of Mistress Ford. Falstaff, unaware of the true identity of Master Brook, brags of his secret meeting with Mistress Ford, and relates how he had to be smuggled in a buck-basket from her house owing to the unexpected approach of her husband. Ford, seething with jealous anger, and scarcely able to control his emotions, engages Falstaff to again visit Mistress Ford secretly, for it is Master Ford's intention not to permit Falstaff to escape from his house a second time.

The next scene shows Falstaff once more with Mistress Ford. While pretending to encourage Falstaff's advances, Mistress Ford is suddenly warned by Mistress Page that Master Ford is approaching again. The dilemma in which Falstaff finds himself and his endeavours to escape never fail to create uproarious laughter. With all his frailties, Schlegel says of Falstaff—"He is the most agreeable and entertaining knave that ever was portrayed. Falstaff is the crown of Shakespeare's invention." Here, then, is a part in which the world's dramatic genius is considered to have attained the pinnacle of his art. Grossly corpulent, dissipated, cowardly, sensual old Falstaff is an outstanding figure in all the world of drama, and his immortality is assured.

Mr. Wilkie has a decided liking for the part of Falstaff, and, indeed, his striking success in the role may be due, in no small measure, to his close study of the psychology of the old knight. And despite his failings, with

Schlegel, one may say of Falstaff "we are never disgusted with him."

Nearly 330 years have elapsed since Shakespeare first staged "The Merry Wives of Windsor." What marvels have been wrought by man since those Elizabethan days when even the very stage and theatres in which the plays were performed were, with their open roofs, but a sorry makeshift compared with the palatial theatrical edifices of to-day! But what of the wonder of radio! Listeners many hundreds of miles from the theatre will sit in the comfort of their homes harkening to wisdom and wit of the great master mind. When the merry laughter storms our ears we may well think of the laughter of those happy audiences back through three hundred years to the days of Good Queen Bess when Shakespeare and his own company of players moved to mirth the patrons of the old Globe Theatre in London.

Mr. Wilkie's Views on Broadcasting.

THE broadcast on Friday will be the first that Mr. Wilkie has ever experienced, and he is looking forward to the experience quite keenly. Asked if he thought that broadcasting would ever replace the stage, he replied in the negative. To him, the appeal of "flesh and blood" would for ever remain an attraction to theatre goers.

He added that there may possibly come a dull time in drama, but that the mechanical broadcast in his opinion, could never display the actual actual performance on the stage.

In conclusion, Mr. Wilkie remarked that he would like very much to hear the opinions of listeners regarding the broadcast. In this respect, listeners are invited to air their opinions through our columns

What 1928 has Written into the Record

THIS year, 1928, has been a very fruitful one, says "Radio Retailing," America. As the past twelve months are recalled there stands out clearly a number of stabilising influences that the year has contributed. Several definite indicators of the future have also become apparent.

To begin with 1928 has broken all records in the number of sets sold to the public. A record volume of sales has been accomplished since January, assisted enormously by the stimulating influence of the election. Electrically operated sets also contributed to this prosperity, because of their intense popularity. This popularity of electric sets has accelerated the progress of both simplification and stabilisation and has led to lower prices. This trend holds promise of still lower prices next year.

Engineering developments have been most significant in 1928. In addition to the perfection of A.C. sets, the outstanding feature of the year was the electro-dynamic reproducer. After a slow start early in the spring, dynamics assumed large importance at the trade show and have since dominated the market.

Increasing interest in the perfection of audio amplification, both in the set and in external equipment, was also notable in 1928. The power valve has been a potent factor in making available greater volume and better tone quality in this year's receivers. Undoubtedly these valves will have a beneficial influence upon 1929 receivers from the standpoint of tonal improvement.

Higher voltage is also clearly indicated for the coming year. Present power valves require high voltage. New developments in reproducers may also make increasingly higher voltages necessary. With this condition confronting the trade, manufacturers may well give thought to protecting the set-owner from high-voltage shocks.

Again, great interest centres in the laboratory right now. For there are several technical developments to-day in the laboratory stage which have every promise of being potent factors in the radio market place in the very near future.

Future Developments.

FIRST, is automatic volume control an important improvement which will automatically regulate the intensity of all signals received? If the signal is too strong, this control reduces it to the proper volume. If the signal is weak, it is amplified to satisfactory audibility. Sets using this control will undoubtedly feature in the 1929 market.

Second, is the screen-grid valve for alternating current? Laboratory difficulties have held this valve back. But we can expect that these kinks will be ironed out, just as other "insurmountable" difficulties in radio's progress have been hurdled. The A.C. screen-grid receiver, then, is another development which may be expected for next season.

Then, third, comes the multi-valve tube. It is widely used abroad, and known there as the "Loewe valve." If this valve wins acceptance here, small compact receivers can be built for a popular price market. For three or

four multi-valve tubes can be made to produce the same results as six or seven of our present valves. It is not beyond the realm of possibility that receivers using this valve will appear on the market in 1929.

What of Television?

AND no record of what is now on the horizon for 1929 would be complete without mention of three other significant laboratory achievements—television, the "electric-static" reproducer, and talking movies for home use. While the television excitement has now died down somewhat, public appetite has been whetted and experimentation in television may consequently be expected to continue. It will assume a larger place as time goes on.

The "electric-static" speaker, which has been popular in Europe for some time, is now being taken up by American manufacturers. It is simple and inexpensive, and will therefore fill an important place if merchandised in this country.

Talking movies for home use is another product of radio laboratories which should not be overlooked. It has already been accomplished experimentally. It will be accomplished commercially in the course of time. The radio trade should prepare itself to be the natural outlet for this equipment when it is ready for sale to the public.

The Future Market.

ALL these new and prospective developments have their immediate commercial influence. Each will add impulse to stimulation and expansion of the market.

The amazing growth of the demand for more and more artistic and expensive radio furniture in the past few months is perhaps the most spectacular example of the rapidity with which new ideas in radio merchandise immediately become market trends and write new chapters in the romantic progress of the radio business. It has been so in 1928. It will be so in 1929.

And if the new developments that lie ahead are wisely directed, the coming year should bring to the radio industry a season of fine achievement and splendid prosperity.

Lyttelton Tunnel**Electrification Ceremony**

ALL the work in connection with the Lyttelton tunnel electrification scheme has now been completed, and the official opening ceremony will take place on the afternoon of February 14. It will be the occasion for some interesting speeches, and SYA will broadcast the whole proceedings.

AT Home a new company is being formed. It is to be Wireless Pictures, Ltd., and its business will take the form of building and selling radio picture receivers.

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Capacity



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6	60	4 10 0
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The Future of Broadcasting

Trend towards Unification



HE changes wrought and to be wrought by radio are almost beyond imagination. There is, perhaps no invention that will surpass this in far-reaching effect upon our civilisation. "The last decade has been a kaleidoscope of evolution and to-day we stand at the brink of a titanic realignment of the communication and entertainment worlds with the versatile vacuum tube as its cornerstone." In these words "Radio Broadcast," one of the leading American magazines, sums up the position of broadcasting to-day, and of the future adds: "We cannot escape the conclusion that this decade will prove the most significant to the history of the stage, the screen, the phonograph, and the broadcasting industry."

Radio has risen rapidly; one cannot say that the development is a prologued boom, though these distressing booms have affected radio as they have affected any other industry. Reference to the figures relating to the growth of radio in this country, will bear this out, but in this, as in most countries, the boom periods have passed and radio is settling down to become one of the most important phases of the lives of the community. Radio has risen from being a humble sideline to a premier place in every progressive nation. Twenty years ago, man was astonished to hear the tapping of the Morse code over the air to be interpreted by a crystal. These were the days when radio was considered the pastime of the wealthy experimenter or the scientist "with peculiar views."

The application of the vacuum tube—the valve, has changed and raised radio from the doubtful experimental stage to the stage of a public utility, and as such a definite addition to the wealth of the world.

Five years ago, the phonograph industry, then almost at a standstill was revitalised by the adoption of the methods of the broadcasting studio in the recording and audio system of the radio receiver for the reproduction. More recently the motion-picture industry, by an almost identical process, has incorporated sound entertainment as an integral portion of the screen reproduction, and it is in consequence enjoying an increasing revival.

From our own point of view the advent of the talking film may or may not be an advantage, especially in view of the remark made by the president of a well-known amateur radio society. "May we be spared from the talking film, the silent one is bad enough, but to be inflicted with the sound of some of the voices which are no better than a rip saw going through a kerosene tin..." But that is by the way.

The Trend Towards Unification.

"SLOWLY but surely, drama, concert, vaudeville, motion picture, phonograph and broadcasting are being drawn into the vortex to form a huge, unified entertainment business, destined to

"NOW that the ends of the earth are being drawn together by radio communication, and now that the nations are seriously considering a method of settling disputes in a more rational manner than by attempts at mutual extermination and irrational wholesale destruction, it behoves us to try and cultivate an international sentiment—that is to say, to extend friendly co-operation and mutual assistance beyond the limits of the family, tribe, and nation, as heretofore, and begin to treat the whole earth as a unit in which humanity is striving to develop its better qualities, and to rise to a higher state." . . . Sir Oliver Lodge in opening an article to "Popular Wireless" on the subject "Radio and Co-operation."

reach the staggering proportions in volume of business and to achieve undreamed of heights in the character of entertainment and education which it brings to the home."

This the American journal considers to be the mission of radio, but it has perhaps stopped too soon. Radio has a far greater mission than that of entertainment to fill—entertainment must take a secondary place. Radio with its far-reaching influence, its rapidity, its certainty, for the hasty reader must not jump to the conclusion that because he has to suffer indifferent transmission occasionally, that radio is not reliable, we speak of the future, and then not of the distant future, cannot remain merely entertaining.

As a means of international business communication, it is destined to alter international relationships, to mould a commercial code of its own.

As a complement to aviation, the future means of transport, a hundred examples of the service already rendered by radio could be quoted, but they would be little more than another infliction of facts that have already been presented with the local colour surrounding the incident. On the value of wireless to shipping there is likewise little need to dwell.

The trend of the wireless development is the unification of the scientific and the artistic. Some few years ago wireless was purely scientific, just as television is to-day. To-day it has been unified with the artistic, with amazing results.

Radio means unification, it is the means of drawing together the arts and the sciences to result in a combination

that will be one of the most useful ever created or evolved by man. To-day all the important phonograph companies are in the radio business. Concurrent is the talking film movement utilising, and employing the inventions of radio.

Natural Alliances.

WE may again quote our American authority on the question of unification. "From the standpoint of efficient and economic operation, unification of broadcast studio management, concert bureau direction, recording of musical accompaniment for sound pictures, phonograph recording and vaudeville management is a natural alliance. These are technically similar and nothing could be more natural and logical than a merger of these activities.

"The leaders in the radio field have at no time been in greater need of unified public support and of intelligent management of their public relationships. . . . We may look forward to centralisation of broadcasting, motion pictures, phonograph reproduction and ultimately television, provided that this service to every element of the public, every taste, every strata, and every shade of religious and political belief is considered in proportion to its needs."

Results of Unification.

PERHAPS the most significant portion of the views of "Radio Broadcast" is the consideration of the results of unification. "To the radio manufacturer, the combination of these now separate industries promises an immensely increased volume of trade, and less seasonal fluctuations in production. To the home user of radio equipment, it will offer a more versatile source of entertainment of both aural and visual character. To the artist it will mean a wider range of activity instead of being restricted to a single field of entertainment, such as recording, screen, or theatre. The unit of sale in radio equipment will raise many-fold, and a billion dollar industry will soon appear.

"Every element of the industry will enjoy greater prosperity, proportionate to the greater diversity and service which it renders."

In view of the trend of radio in New Zealand at the present time, this view

is of no casual interest. The paper has pointed out in emphatic terms that a service unified in all its functions is the ultimate development of radio. This is only after years of the keenest of radio competition, for as all readers will know, there has been, until very recently, no attempts at co-operation among the various stations. All have striven against their neighbours in their attempt to command the audition of the very large number of listeners.

What has been the result? Failure!

Competition has already had to be replaced in several cases, and the Radio Corporation of America, a combination of stations has appeared and is increasing its hold over American broadcasting.

This was no more than was to be expected, for sooner or later competition must, if uncontrolled, kill itself. The struggle for the mastery of the air in that country resulted in the Radio Convention, which ordered off the air many stations, and severely limited the hours of other.

This is the experience of broadcasting in America, and in view of this, it is incumbent upon every New Zealand listener to see that his country bene-

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fits by its experience. There is no point in going through the same history, that is not progress. Real progress consists in the guiding of the present by the errors of the past. Broadcasting in this country is yet too much in its infancy to try the experiments that have been tried in a country more advanced in this science. They can lead only to dismal failure, and perhaps to the wrecking, or rather should it be said the retardation, of this important service to man.

In New Zealand the stage calling for the unification of the different branches of radio as mentioned by "Radio Broadcast," has not been reached, and will not be reached for some considerable time, but the stage has been reached where, the future of radio being definitely assured, more are clamouring to enter the field.

A strong central organisation is not only considered essential—it is absolutely necessary.

"B" Battery Eliminators

THE coming season will mark the increased popularity of B eliminators, and already several new types are appearing on the market. This should have a wide appeal.

The National B Eliminator (Messrs. Bond and Bond) is a splendid eliminator for the enthusiast who wants high voltage at maximum output. The National B Eliminator is strictly a heavy-duty unit having an output of 70 milliamps. at 180 volts. There are four variable tappings on this piece of apparatus, so that the range of current is from 22 volts to 180, an exceptionally wide range. The eliminator uses either the UX280 or CX380 full-wave rectifying valve. The eliminator is neatly finished and fully shielded, and besides being a most efficient piece of apparatus, would grace the radio equipment of any listener.

Broadcasting in Australia

THE Australian Federal Wireless Advisory Board is to take control in the near future of all broadcasting in Australia on behalf of the Federal Government. Private ownership of the monopoly right to broadcast either from an "A" or "B" class station is to cease as soon as arrangements can be made for Government control.

Trafficking in broadcast licensing which has taken place in the past will

not now be permitted. It has been stated that the right to the license under which 3LO Melbourne broadcast was transferred originally for £40,000 and all that was passed over for this fee was the paper license issued by the Post and Telegraph Office.

Recently "B" class licences have changed hands for as much as £5000. Under Government control adequate provision will be made for the renting of a "B" station to an individual or organisation for a particular purpose should that be desired.

There will be a certain number of wavelengths retained for "B" stations in each State but these will not be the private property of any individual or company. Provision will be made for the renting of a "B" station for a particular purpose by an individual or an organisation. The Board considers this will ensure a greater variety and a better quality of programme from "B" stations in the future than has been possible in the past.

The changes, it is considered, will be far-reaching and will establish broadcasting in Australia on a firm and popular basis within a year of the Government's taking control.

Short Wave News

ON Wednesday, January 30, writes Mr. C. P. Wilkinson (Blenheim), I decided to test out what Mr. Morrison suggested in your last issue with regard to 5SW, and accordingly tuned in my short-wave set about 12.30 a.m. in search of him. Listened for a while to a station on 17 metres calling what sounded like "Hullo Kopang; here is Bandoeng." This repeated several times and I concluded he was PLG, Java.

I picked up 5SW about 12.45 a.m. and held him until he closed at 1.35 a.m. I must say I was astonished at the volume, and clarity. Volume was about R8-9—all through and clarity all that could be desired. I strongly recommend other short-wave enthusiasts to lose an hour or two of sleep to listen to 5SW at this hour. I am certainly going to have another late sitting. I have heard 5SW many times, but never like this.

DURING the last four years the number of radiograms sent has risen from 300,000 to 1,250,000.

DIRECT radio service between Vienna and Cairo has been opened by a telegram from the Egyptian Consul-General at the former city to the Foreign Minister at Cairo.

Children's Sessions

AT 1YA.

TUESDAY, FEBRUARY 12.—Uncle George to-night and with him Mrs. Arthur Griffiths, and her merry little band of entertainers, so tune in at 6 o'clock sharp.

WEDNESDAY—Uncle Tom on deck with more of his humorous stories and birthday greetings. Cousin Eric will play the piano, and we all know how well Cousin Eric plays.

THURSDAY—We have Peter Pan with us to-night, and also cousins singing and reciting, birthday greetings, and happy stories. The gramophone man will also be present with interesting records.

FRIDAY—Here are Aunt Jean and Nod with all sorts of interesting pieces to while away the hour. Mr. Davy will tell the radio family about foreign countries.

SATURDAY—Cinderella away on holiday, so Uncle Mack is in charge to-night, and with him the farmer's boy with humorous songs and cousins reciting.

SUNDAY—Children's Song Service, conducted by Uncle Leo, assisted by cousins from Dominion Road Church of Christ.

AT 2YA.

MONDAY, FEBRUARY 11.—Uncle Jeff will talk to you this evening, and Cousin Ailsa will sing some of her dear little songs. Cousin Zac will also be there with his steel guitar.

TUESDAY—Uncle Jim will greet you and give fairy messages over the air. Cousin Phyllis will read a story and Cousin Eva has arranged a little programme of good things.

THURSDAY—Aunt Gwen with stories for the little folk and greetings for all. The clever little pupils of Miss Myrtle Lee will entertain.

FRIDAY—Big Brother Jack with old Robinson. Cousin Marjorie is coming too, and also some new little cousins, pupils of Miss Thelma Aitkin.

SATURDAY—Uncle Toby and Aunt Gwen will have birthday greetings and stories for you and Cousin Dora, who plays the

'cello so beautifully, has arranged some instrumental trios.

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

AT 3YA.

MONDAY, FEBRUARY 11.—Have you ever delved into the New Zealand or Australian bush; sauntered through the English woods and parks; gone a-roaming in the forests of Canada, or explored the jungle of the East? If not—then why not come along with Scatterjoy this evening? Take your seats in our Travel Train. The whistle blows, the carriages move, and we're off.

WEDNESDAY—To-night is our gramophone night, and Big Brother is at the helm. Listen to the Ten Little Nigger Boys, and to the adventures of Teddy Tail.

THURSDAY—Uncle Hal with new stories and songs for you, and Cousins Pat and Keith helping with merry songs and recitations.

FRIDAY—Mr. Storyman making a name for himself with his stories for all. And do you remember the Cheerio Lads? Well they are coming to visit us again, so listen out for their choruses and jingles.

SATURDAY—That Mr. "Chuckie" off on his holidays, so young Uncle Johnny is coming along to help Aunt Pat and we are all going on a visit to the moon with Molly and Jack and Galloping Gus.

SUNDAY—The Children's Song Service conducted by Uncle David, and the scholars from the Methodist Sunday School singing the hymns.

MUSIC of a high-class nature is to be popularised in New South Wales. As both the Sydney stations, 2FC and 2BL, are under the one management it will be possible to put a classical programme on from one station and a varied popular programme from the other. Such an experiment has met with success in England, and there seems little doubt that it will prove satisfactory in Australia.

Special Sale of RADIO Goods

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SPEAKERS:
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Radio Round the World

BROADCASTING licenses issued by the Department of Marine and Fisheries in the fiscal year ended March 31, 1928, numbered 268,055, as compared with 215,650 in the previous year, an increase of nearly 25 per cent. The number of licenses issued is usually accepted as representing about one-half of the total wireless sets in use, which would indicate that about 635,000 sets were in operation in the Dominion, or about one for every 18 persons. About 80 per cent. of the licenses issued were in Western Canada. In this regard Ontario led with a total of 125,012, followed by Quebec with 51,347, these two provinces accounting for about 65 per cent. of the total.

THE Reichs-Rundfunk Gesellschaft has concluded arrangements with five insurance companies whereby free insurance against liability for accidents caused by wireless apparatus and aerials will be included, as from midday on January 1, 1929, in the ordinary listening licenses granted in Ger-

metres. The French station of "Le Petit Parisien" also broadcast a special concert arranged by the "Chicago Tribune," in the course of which news received by cablegram and through the medium of the American short wave broadcasting stations referred to above were given of the progress of the election. This special broadcast concert began at 11 p.m., but was preceded by the usual "Petit Parisien" transmission beginning at 8.45 p.m. The concert continued throughout the night, and only closed with the announcement of the final election. The news was given both in English and in French.

GREECE is turning its attention seriously to the question of broadcasting. Applications for the concession of a twenty-five years' monopoly in broadcasting have been invited by the Greek Government, who will provide, free of charge, the necessary land for the erection of a high-power station. In return the Government reserves the

first production of "Faust" took place on January 19, 1829; and at Wolfenbützel, the town in the State of Brunswick where Lessing (who was born on January 22, 1729) was employed as a librarian. Exhibitions entitled "Faust on the Stage" and "Lessing and His Time" will be held at the historic castle of Dankwarderode in the town of Brunswick and at Wolfenbützel. The inaugural ceremonies in the two towns from January 19 to 22 are to be followed by a Faust Theatre Week in Brunswick and a Lessing Theatre Week in Wolfenbützel.

THE Copenhagen police have recently achieved some good results with picture-transmission between the headquarters in Copenhagen and police-stations on the outskirts of the town. Both photographs and finger-prints of criminals were transmitted through a general telephony cable for the purpose of examining the usefulness of the system to the service. The apparatus necessary for the tests was lent by the short-wave station 7RL. A police

official in Copenhagen said, in an interview, that he was very pleased with the results and that the system would in the future become a necessary adjunct to the development of the police system.

WHAT are termed "mechanical cops"—really new "monitoring" devices—will be installed shortly in various parts of the United States by the Radio Division of the Department of Commerce, to check the frequency measurements of broadcasting stations. It should thus be possible for the Radio Division to issue charts similar to those prepared by the Brussels Laboratory of the Union Internationale de Radiophonie, which are familiar to our readers.

A RECENT 2BL programme was picked up in Shanghai (China) by the owner of a 3-valve set. He describes in detail the items as received by him on earphones, but is hopeful of getting Australian stations on loud speaker strength before long.

A scheme is being worked out between the New South Wales Broadcasting Company, Australia, and the National Broadcasting Company of America, for an interchange of programmes on a basis new in the history of radio. The idea is for each station to broadcast items alternately, each taking the other's items, and rebroadcasting them in between. Thus station 2FC, Sydney, might start by broadcasting "The Last Rose of Summer." This would be picked up in New York, and rebroadcast as part of the National Company's programme. As soon as the item was over the American station would radiate an item—say, Kathleen Marvourcen—and this would be picked up by the Sydney station and re-broadcast. So the programme of the two stations would run on for an hour or so, listeners in each country hearing their own and the overseas items alternately. Each station would transmit on two wavelengths; the ordinary wave used for local broadcasting, and a special short wave for long-distance work.

many and the Free State of Danzig. The insurance will cover liability of third persons and their property, to the amount of £5000 and £1250 respectively. The liability of tenants to landlords is included.

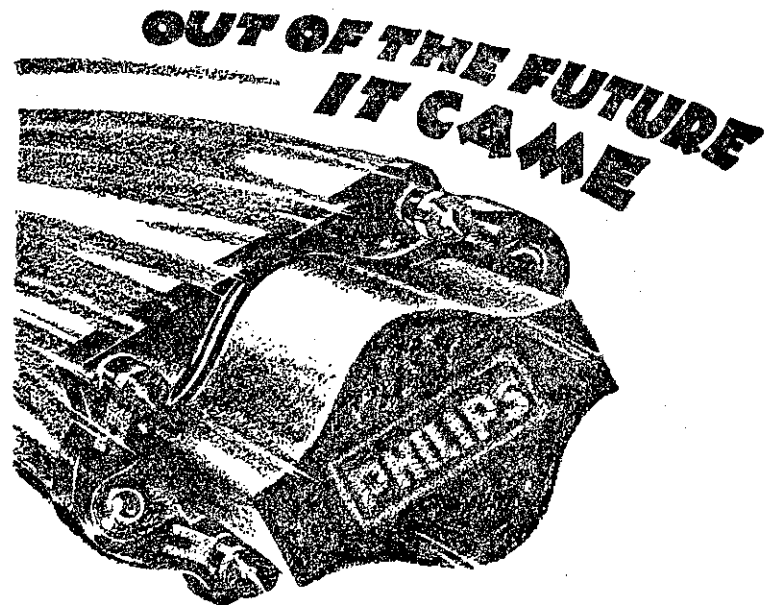
A TRIAL of broadcast reception on a train running between Budapest and Vienna was carried out by the Hungarian State Railway recently. The experiment was successful, and it is now proposed to institute a regular broadcasting service on all railway lines throughout Hungary. Earphones are hung over every seat in the carriages, and can be used by passengers on payment of 25-30 pf. (about 3d.-3½d.)

FROM 12 (midnight) (Greenwich mean time) onwards on the night of the American elections, the National Broadcasting Company of America, by arrangement, broadcast from all American stations the results of the Presidential election as the returns from the various States were received. Among the stations specially well received in Europe and broadcasting on this occasion are the short wave stations of Pittsburgh (8XK) on the two wavelengths of 27 metres and 63 metres; Schenectady (2XAD) and 2XAF on the two wavelengths respectively of 21.96 metres and 31.4 metres; and station 8XAL at Cincinnati on 50

metres. The French station of "Le Petit Parisien" also broadcast a special concert arranged by the "Chicago Tribune," in the course of which news received by cablegram and through the medium of the American short wave broadcasting stations referred to above were given of the progress of the election. This special broadcast concert began at 11 p.m., but was preceded by the usual "Petit Parisien" transmission beginning at 8.45 p.m. The concert continued throughout the night, and only closed with the announcement of the final election. The news was given both in English and in French.

ONE family in every three in the United States is the possessor of a wireless receiver, according to the "Christian Science Monitor," and the majority of sets have from five to six valves. To arrive at these statistics, an inquiry was prosecuted under the direction of Dr. Daniel Starch, on behalf of the National Broadcasting Company. In all 17,099 families—in cities spread over 68 counties—were questioned, and of these 5608 owned receivers. Of the total number of families, only 3 per cent. still have crystal sets, while 80 per cent. use their receivers in summer time.

THE hundredth anniversary of the first stage production of Goethe's "Faust" and the two-hundredth anniversary of the birth of Lessing will be commemorated in 1929 by a Goethe-Lessing Year, arranged under the direction of the Goethe Society of Weimar. The commemorative ceremonies will take place at Brunswick in the Ducal Theatre of which the



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The New Zealand Radio Record

P.O. BOX, 1032, WELLINGTON.

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

WELLINGTON, FRIDAY, FEBRUARY 8, 1929.

EDITORIAL NOTES.

CONGRATULATIONS may be extended to Mr. Allan Wilkie for his courtesy and breadth of vision in acquiescing in the broadcast of two Shakespearean excerpts from next Friday evening's performance at the Opera House, Wellington. Not only will 2YA interrupt its ordinary programme for these two items, but station 3YA will pick up the features and rebroadcast. By this means it is considered likely that some 80,000 people on that evening will hear the first broadcast in New Zealand of a stage performance of Shakespeare. It will be interesting to have the views of listeners on this event.

THE British Broadcasting Corporation is now adopting the practice of issuing a regular annual report. From the copy just to hand some items of interest and value may be taken. The Corporation now operates twenty stations, serving a population of 42,000,000. The licensees number 2,400,000, an increase of 200,000 on the year. The hours of transmission over the 20 stations totalled 68,000, but approximately 85 per cent. of the important programmes are relays from 2LO or other major stations. The staff of the Corporation now totals nearly 1000, some 400 being on the technical and engineering side, and the balance in office and administrative capacities. As is but to be expected the general body of listeners are not slow in airing their views, and the Corporation received in the twelve months some 60,000 letters from listeners in reference to programmes alone, while no fewer than 26,000 letters were written to the technical experts pointing out deficiencies in transmission, etc., which the listener could detect, in spite of the best efforts of the technical staff to give perfect transmission. It would be interesting for our own Radio Broadcasting Company to supply similar comparative figures. The New South Wales Broadcasting Company, in a commentary upon the British figures, admits that it received in the past twelve months 5000 letters from listeners dealing with technical matters and 36,000 letters in connection with programmes. Allowing for the difference in the populations served, therefore, it is very apparent that the Australian is either very much more prone to express himself, whether satisfied or dissatisfied, or else that he has more occasion to write than his British

confirere. The former is probably the more correct assumption. A comparison with the New Zealand figures would be particularly interesting.

IN one field the British Broadcasting Company has made noteworthy advance, and that is in connection with educational work in schools. Some 4000 schools are now linked up with wireless and receive regular instruction in various subjects by means of radio. This matter is being kept in view in New Zealand. Tests as between the YA stations and the Education Department were carried out over a year ago, and a definite measure of success recorded in the various reports available at that time. Certain difficulties, however, it is understood, hedge the Department about in recommending a general adoption of the system. The offer of all facilities has been made by the Radio Broadcasting Company, and it awaits only official acceptance and the solution of the problems presented for the system to be inaugurated here.

IN the matter of news, two regular bulletins are issued, one at 6.30 and the other at 9 p.m. This news is gathered mainly from official sources and from Reuters. In the main, it is understood, the British Press, which, of course, goes to great expense in securing news for itself, is reluctant to pass on to the British Broadcasting Corporation even summaries of the stories to be given by it. This is understandable enough, but is in point of fact a little in contrast with the more liberal American policy, where the great news agencies not infrequently supply radio stations with the points of coming news items. In New Zealand, the Press, while naturally preserving and guarding its own interests in the matter of news, frequently extends generosity in news items.

Summed up, the report of the British Broadcasting Corporation's activities covers a tremendous range of subjects, and indicates the growing magnitude of a modern broadcasting service if it is to fully cater for all the interests of listeners. More and more features require to be added in order to maintain and extend the popular use of radio.

Prizes Offered for One-act Play and Poems

WE give another reminder of the two literary competitions now being conducted by the Radio Broadcasting Company. One competition relates to the writing of a one-act play and the other to the composition of two poems, one dramatic, the other humorous.

Full particulars appeared in the issue of the "Radio Record" of January 18.

The competition for the best original one-act radio play was proposed by the 1YA Musical and Dramatic Committee, the 2YA Musical and Dramatic Committee being accredited with the suggestion that prizes be given for the best literary efforts in the direction of poetry. The judges of the entries in connection with the

one-act play will be a sub-committee of the 1YA Musical and Dramatic Committee.

Entries in the radio play competition, for which the prizes are £5 5s., £1 and £1 1s., close on February 28.

The time for the closing of entries in connection with poetry competitions is March 1.

The prizes for this competition will be:—First prize, £3, second prize, £2, third prize, 10/6 box of Cadbury's chocolates. All the three prizes are donated by Cadbury's Limited.

The judges who will officiate in connection with the competition for the best original poems, dramatic and humorous, will be Mr. Johannes Andersen (Turnbull Library), Dr. Guy Schofield, and Mr. C. A. Marris, editor of the "N.Z. Referee."

Co-operation with Constructors Wanted

THE Technical Editor of the "Radio Record" is desirous of making contact with a certain number of competent and interested radio constructors, with a view to occasional co-operation in the matter of testing apparatus, circuits, etc. Effort is made to personally

construct and test all apparatus described in the "Radio Record." The volume of this work occasionally proves taxing, and it is desired to make the acquaintance of some who would be prepared to occasionally co-operate in the matter of testing trade apparatus supplied, components, etc., and record the results. Would those prepared to co-operate on this basis please write the Technical Editor, P.O. Box 1032, Wellington, with a view to arranging an appointment?

Marvellous
Accuracy of
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Auckland Notes

(By Listener.)

TO every station there is usually a "best night" in the week. At IYA the palm must lately be awarded to Tuesdays. Following its silent night, the Auckland station has come on the air recently with several programmes of particularly high calibre, containing that spice of variety which makes them suitable to all tastes. On Tuesday last the entertainment broadcast was more than usually enjoyable. Particular reference may be made to the vocal gems supplied by Madame Cora Melvill and Mr. Norman Day, and to the pleasing contributions of the Bohemian Duo, who seem to have secured the knack of always hitting public taste with their tuneful melodies.

QUITE a number of listeners have expressed the opinion to the writer that, while the talks upon early New Zealand and the Maori are very interesting and well delivered, the subject itself is being worn rather threadbare. They would welcome a change of material.

IN these summer evenings, when enjoyable reception is confined virtually to the local station, it is gratifying to notice the favourable comparisons that are made between IYA and other broadcasting stations. Our local fare, though there will always be some who grumble at it, will stand comparison with the best supplied elsewhere in the Dominion.

IT has been suggested to the Minister of Education that the proposed "B" class broadcasting stations, for the sanctioning of which a certain section of the community are agitating, could undertake educational broadcasts for schools. This is a type of service which must come, but it must develop gradually, after due experiment, and one can see no more efficient source for experiment than our own IYA plant, which has a remarkable daylight range in the province. If radio for schools is to come in the Auckland district, it should be through the good offices of IYA. It is known that the company and the staff are willing to afford full facilities for any scheme which the educational authorities may advance. One fails to comprehend how other less powerful plants, worked under less experience, could undertake satisfactorily what already established broadcasting is prepared to do, and, in its own part, do with assurance of success.

CHILDREN'S sessions will be back into their usual stride again next week. Thousands who have missed their speakers or 'phones during holidays at the seaside and in the country will be eager to hear "Cinderella"—she of the charming radio personality—and those delightful Uncles, some of whom, too, have been enjoying a deserved holiday. Uncle George and Uncle Tom will both have appeared at the microphone again by the time these notes are in print, and a warm welcome will have been accorded them.

THE action of the IYA Children's Committee in applying the accumulated anonymous and other donations which have come in to the studio to such a worthy object as the supplying of poor crippled children with receiving sets, and paying the license therefor, has earned its due reward. Letters of appreciation and gratitude

The Press and Radio

Points from an American Controversy

THE great part that radio played in New Zealand on election night will be remembered by all listeners. In the United States it was relatively equally or more important. There, as here, the press co-operated in supplying the radio services with advance figures of election results, thus enabling millions of people to know the main decisions and the general trend even before the next day's papers were published. In spite of that fact, all newspapers reported record circulations on the day following the election, thus proving that the advance information over the radio simply whetted the appetite of the public for more detailed and accurate figures. The same outcome was apparent, we believe, in New Zealand, in that metropolitan papers, at any rate, enjoyed record sales on the day following the election.

Following the American election, the part played by the radio and the press has become the subject of definite controversy, the point of argument being: Is it wise for the press to supply the radio with news, election or otherwise? A questionnaire on this subject was issued by "The Editor and Publisher" to forty representative newspaper men, fifteen being newspaper owners and 25 prominent executives of newspapers. The replies and views of these men are given in full in a long special article, but a summary of the views expressed is as follows. The diversity of outlook is at any rate quite refreshing and shows that the matter has many angles:—

Eight of those replying either approve the radio as an adjunct of newspaper publication through pre-announcement of news bulletins, or are indifferent to it as a menace to the press.

Fourteen of the newspaper men would approve eliminating of advertising trade names from radio programmes published in newspapers, while six believed that the trade names were news in that they were needed to identify programmes in which the public was interested.

Some pertinent extracts from the opinions expressed were:—
"I think the radio has more potential danger to newspapers as a rival advertising medium than as a rival distributor of news."—William R. Hearst.

"I consider radio programmes important news."—George B. Parker.
"Radio stations are soliciting advertising in direct competition with newspapers."—A. L. Fish, "Salt Lake Telegram."

"To make a daily habit of giving out news in advance of publication is not only undesirable, but it is foolish."—Clark Howell, "Atlanta Constitution."

"I have quite gotten over my fear of the radio hurting the newspapers."—Julian S. Mason, "New York Evening Post."

"Radio programmes in newspapers will disappear in time or be placed in space advertising."—George B. Longan, "Kansas City Star."

A New Station

A BROADCASTING station erected by Philips, HUIZEN, is working on a wavelength of 16.88 metres. Transmission times are not available. Philips Lamps (N.Z.) state that they will welcome reports concerning reception from this station.

from the afflicted beneficiaries have come to hand, and they are delightfully pathetic in their childish sincerity. After seeing the great boon which radio is to an invalid child of wealthy parents, and how keen an interest this lad displays in all that comes over the air, the writer is able to picture the benefits that will accrue to less favourably situated youngsters who have expressed their thanks to the IYA Committee.

OUR Anniversary Day, a week later than that of Wellington province, gave the station a busy time in supplying particulars of the many sports, racing, aquatic, cricket, and tennis, which eventuated here.

WE have had a new, and quite a brisk and pleasing announcer for the past week. Mr. C. R. Straubel, whose voice is known to listeners through his participation in radio debates, has been relieving Mr. Cufford Bell for a few days, and, though naturally inexperienced, he has been wonderfully successful before the microphone, and his voice has won him a host of friends unseen.

Television at Present

Only in Experimental Stage

IN an address delivered before the general session at the meeting of the National Electrical Manufacturers' Association of America, Louis B. F. Raycroft, vice-president of the radio division, declared that "it is an injustice to the public at large to encourage it to expect television in the immediate future."

Emphasising the importance of a correct understanding of television and its importance to the radio industry and the public, Mr. Raycroft said, "a new factor is entering the situation threatening new complications. The public is expecting another kind of broadcasting service popularly known as television. The Federal Radio Commission is even now considering the formation of regulations to govern this new field of radio endeavour."

"THE great public interest in television is founded upon exaggerated newspaper reports of brilliant laboratory demonstrations rather than upon the actual practical status of this virgin field which is as yet entirely unprepared for commercial development. A diligent study of the subject leads to the inevitable conclusion that the premature stimulation of public enthusiasm in television is misleading and dangerous to the progress of radio because there is no means of satisfying the demand for reliable home television equipment."

Television remains a laboratory experiment with a number of major and vital problems still unsolved. There are certain specific technical obstacles to practical television which cannot be overcome unless a fundamental and original invention or inventions are made and no technically qualified observer will predict whether they will be made within twenty-five, ten or five years, or even less."

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S-O-S

TRAVEL IN COMFORT BY CAR

NEW PLYMOUTH.

WELLINGTON — PALMERSTON

Australian Listeners

The latest figures of licensed listeners in Australia are as follow for the respective states:—

	Total	Per cent. of Population.
New South Wales	91,709	3.78
Victoria	141,890	8.11
Queensland	25,224	2.77
South Australia	22,120	3.81
West Australia	3,828	.96
Tasmania	4,117	1.95
Commonwealth	288,888	4.59

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

KING NEUTRODYNE

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

Australia's talent commanded in your armchair.

Several Models for your Choice.

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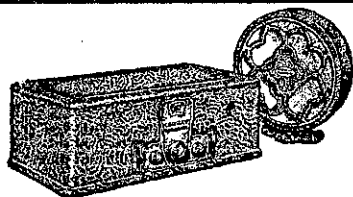
A single control 6-valve KING set, an epitome of simplicity, selectivity, and range.
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With valves.
Money Can Buy No Better.



Street Lighting at Glen Falls

THE street lighting system at Glen Falls, New York, is controlled by wireless. A transmitting plant using only one wavelength is used while five receiving sets capable of picking up the transmitter's wave only respond to the signals sent out. It is necessary to operate the transmitting plant only fifteen seconds a day to illuminate a whole town.

In the power house the transmitting plant is kept, and the panel containing the equipment is accommodated with two switches, one marked "on" and the other labelled "off." The first switch sets the transmitter in operation for 5sec., while the second turns the transmitter off, but, however, it operates automatically for 10sec. The five receiving sets are installed in various parts of the town. When it is time for the lights to be extinguished the operator at the power house turns the "off" button on, and, at the proper moment the lights go out.



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Was Radio Known in Shakespeare's Day?

Views of an English Writer

NONSENSE, surely; but not from the angle taken by a writer to the Christmas issue of "World Radio." The following article from his fluent pen is both entertaining and instructive, and well worth the perusal of all interested in the greatest dramatist the world has ever known.



RIGHT at the very outset I think this question may be answered in the affirmative; for although there are no absolutely direct allusions to radio in Shakespeare's plays, there are many very significant sentences scattered through them which clearly suggest to me that the great dramatist was thoroughly familiar with radio in all its branches. I have, in fact, evolved a little theory of my own, showing how Shakespeare became an addict to wireless—a theory whose possibilities were suggested to me after a discussion I had the other day with a friend, a Bacon fanatic, who pointed out to me that that delightful little oral test for sobriety which comes in Love's Labour's Lost—I refer to the word "boni orificabilitudininitibus"—can be anagrammatised into the sentence, "It is I—I, F. Bacon, author—built in it." This, my friend explained, was Bacon's cryptic method of announcing to the world that his identity as rightful author of the play was "built in" (or, as we should say, immured, or concealed) beneath this sesquipedal monstrosity.

IT is, however, no part of my present task to plunge into the Bacon-Shakespeare controversy, but it has occurred to me that if the author (whichever of the two he was) of the plays intended cryptically to convey information on one vitally important matter, he might similarly have acted with regard to another. Anyway, that is the assumption I have worked upon, and so, by means of references which may easily be interpreted to refer to radio, I have constructed the following hypothetical little story, the protagonist of which I will call Bacspeare in order to avoid treading on anybody's corns.

Bacspeare, then, like so many of us, began his radio experiences with a small, home-made crystal set. In Othello (Act V. sc. 2) he refers to "one entire and perfect chrysolite"—an obvious allusion to a particularly effective crystal he had obtained; while in "The Merchant of Venice" (Act VI. sc. 1) he makes mention of "a harmless necessary cat"—"cat," of course, being the term employed, owing to the exigencies of metre and scansion, to express the necessary (and harmless) "cats-whisker." That there were kind-hearted speculative builders in Shakespeare's day is proved by the line in "Henry VIII." Act IV. sc. 2), "Give him a little earth for charity!" obviously indicating his intention of providing for the needs of a prospective tenant with a listening set.

Subsequent trouble with his aerial ensued, for in "The Tempest" (Act I. sc. 2) he euphemistically anathematizes it as "my quaint Ariel!" I suggest that Ann Hathaway made it

"quaint" by hanging the washing on it, and so interfering (since damp clothes are conductors of electricity) with the insulation. The trouble, however, was only temporary, for later on in the same scene Prospero is made to exclaim, "It works. Come on. Thou hast done well, fine Ariel!"

At a later eriod it is obvious that Bacspeare introduced a thermionic valve into his set, and at once experienced trouble with it—his "glow-worm," as he prettily and poetically termed it. In "Hamlet" (Act I. sc. 5) we have a thinly-veiled reference to the running-down of his accumulator in the words, "The glow-worm...gins to pale his uneffectual fire," whereafter it is evident that he called in the local radio-expert to locate the fault from the line in the same play (Act II. sc. 2), "Find out... the cause of this defect," a task which I imagine the electrician carried out a la Harry Tate, for Bacspeare was assuredly alluding to the incident when he wrote (ibid., Act III. sc. 4), "This sport to have the engineer..."

Next came upon the scene that familiar "fan" friend, whom we all know so well; the fellow who always insists on "improving" our set for us, whether we want him to or not. Bacspeare's friend clearly wanted to increase the range of the set, at which the dramatist was at first manifestly delighted, since in "King John" (Act II. sc. 1) he somewhat modestly says, "I am not worth this coil that's made for me." However, he subsequently experienced difficulty with it, becoming exasperated and petulant. At least, that is how I interpret the little outburst of temper in "The Tempest" (Act I. sc. 2), displayed in the protest, "Who was so firm, so constant, that this coil would not infect his reason?"

THAT he eventually became the possessor of a thoroughly efficient and powerful set is demonstrated in "A Midsummer Night's Dream" (Act II. sc. 1), where he says "I'll put a girdle round about the earth in forty minutes!" meaning to imply, of course, that in that time he could successively pick up all the stations east and west of him, until he had completed the earth's circumference. In addition, he had similarly acquired a very satisfactory loud-speaker, as is shown by the line in "Henry VIII." (Act IV. sc. 2), "I wish no other speaker."

Such is the story I have constructed to prove Bacspeare's possession of a receiving-set, as fully equipped as anything we have to-day. Let me now go on to show what a zealous listener he was to the daily programmes. Take the Children's Hour. To what else can he have been covertly alluding in "Hamlet" (Act I. sc. 5) when he exclaims, "Oh, my prophetic soul! My uncle!" or in "A Winter's Tale" (Act IV. sc. 2), when he speaks of "songs for me and my aunts"—as clear a re-

ference to the chorus-songs which are sometimes broadcast, and in which the children listening are invited to join, as you could hope to find.

Again, I feel quite sure that Bacspeare had a B.B.C. Symphony Concert in mind when he wrote the line in "The Merry Wives of Windsor" (Act II. sc. 1), "Faith, thou hast some crotchets in thy head now!" while I am equally sure that he was voicing his disappointment over an unsuccessful attempt to broadcast the song of the private nightingale belonging to some Beatrice Harrison of his day, when he sadly repines in "Two Gentlemen of Verona" (Act III. sc. 1), "There is no music in the nightingale!" Also it seems quite apparent that certain prominent actors in his time were enticed from their legitimate sphere in the theatre to perform before the microphone, as witness the line in "A Midsummer Night's Dream" (Act II. sc. 1), which speaks of "certain stars shot madly from their spheres."

FURTHER, it is not too much to infer that at least two well-known present-day personalities in the radio world had their counterparts in Bacspeare's day. His whimsically apt description of "Queen Mab" in "Romeo and Juliet" (Act I. sc. 4) "In shape no bigger than an agate..." clearly refers to the Tudor prototype of the B.B.C.'s present dramatic critic, whose meagre and attenuated frame is a constant source of anxiety to his many friends. Similarly, the allusion in "Henry V." (Act IV. chorus) to "a little touch of Harry in the night" is evidently intended to imply the existence of some Elizabethan Job Henry.

FINALLY, Bacspeare was transparently alluding to television experiments when he wrote in "Measure for Measure" (Act II. sc. 2) the words, "his glassy essence—like an angry ape—plays such fantastic tricks," while I think that we may safely conclude that he was summing-up the television position of the day when he observed in "A Midsummer Night's Dream" (Act V. sc. 1), "The best in this kind are but shadows."

And that's that. I end as I began, by affirming that radio undoubtedly was known in Shakespeare's day, an assertion which, by virtue of the hidden lights I have now produced, I trust I have successfully and incontrovertibly Q.E.D'd.

IT is said that a new station will probably be on the air soon. The station will be opened by the Caroline Bay Association, and will have a power of 100 watts. If such a thing happens it should be a big advertisement for Timaru.

Operating the Loudspeaker Away from the Set.

IT is very often found that people wish to operate their loudspeakers some distance from their receiving sets, and the difficulty is encountered, "How shall I run my leads?"

This is quite a simple operation, providing one or two necessary precautions are taken.

Almost any wire will do for the extension, providing it is insulated. If pieces of wire only are available, if possible, solder them together. If not, make a tight joint and thoroughly insulate with insulation tape.

A radio enthusiast known to the writer recently tried an extension of this description, but forgot the most important part, this is, of insulating his joins. He was running his leads to a tent some short distance from the receiving set, and had his wires lying on the damp ground. After a time he noticed that his battery was becoming very hot, and that small sparks were jumping between one of the leads and the ground.

At first, he was rather amused at this, but when his attention was drawn to the fact that he was short-circuiting his battery and running a big chance of burning out the winding of his speaker, his attitude on the affair changed, and the join was summarily insulated.

The Polarity Test.

ANOTHER important point to watch in running long speaker leads is that the positive wire be connected to the positive terminal of the speaker. This is easily overlooked, especially when long leads are brought into use, particularly so if the leads are of the same colour.

A test of some description must be made to distinguish one wire from the other. The simplest method of doing this is to earth one terminal of the A battery and connect one of the wires to the positive. Now take an ordinary flash lamp, connect the free end of each wire to the bulb, and the other terminal of the bulb to the earth. If the bulb lights, then the constructor will know that that wire is the one connecting with the battery at the other end. The A battery can be easily earthed by means of the earth connection and the A is usually so earthed.

Long Speaker Leads and Oscillation.

SOME enthusiasts who work their speaker at a great distance from their set, have wondered at the poor quality of tone obtained when their speaker leads are running underneath their aerial. This is due to capacity effects between the aerial and the speaker leads, and is liable to do damage as well as spoil the tone if precautions are not taken to prevent it.

The most simple method of overcoming this difficulty is to incorporate a radio frequency choke and by-pass condenser between the tickler and the primary coil of the first audio transformer. A diagram of how this may be done appears under the article on Regeneration.

Cleaning the A Battery.

IF there is anything other than defective components that tends to mar reception it is dirty A battery connections. Quite frequently the writer has been asked to look at a set that is not performing as it should, and almost invariably there is a dirty A battery to

blame. The acid soon corrodes and forms a deposit on the surface of the accumulator which, if not soon removed, forms heavy corrosion and interferes with reception. Dirty lugs, on to which are clipped the leads to the set, can cause reception to be very seriously weakened, and there is really nothing easier than to wash the battery and remove this very patent cause of annoyance.

A convenient method for cleaning the top of the storage battery is to place it under a hydrant and let the water run over it. This, of course, with the vent caps in place.

While the water is running over the battery vigorously scrub the surface with an old scrubbing brush, which will remove the acid and dirt. After the battery has been thoroughly cleaned with water, go over the battery again

the soda, about one-half inch thick, to remain at the bottom of the container.

More B Battery.

"COULD anyone get greater signal strength by increasing the numbers of B batteries in use on the number of dry cells if they were used for the A battery?"

PROVIDED the batteries in use were in good condition—no. Nothing but harm could be brought about. The valves are made to take a certain amount of current at a definite voltage, or, should it be said, a definite range of voltages, as is the case with the B or high tension battery. If this voltage or range of voltages is exceeded an undue strain is placed on the valve and it soon fails.

Wiring Hints.

A SAFETY tip to observe after constructing a new set or after making any alterations to wiring, is to turn the low-tension supply on so that the filaments are just glowing, and then with the negative side of the high-tension plug in its socket insert the positive high-tension plug in the first positive socket, which will be probably three or four and a-half volts, meanwhile carefully watching the filaments. If the brightness is not increased it is safe to assume that the high-tension is not connected across the filaments. When wiring is carried out with bare wire, care should be taken that all wires are well spaced and stiff, so that one will not droop against another. A point which is often overlooked is that of ascertaining that none of the wires touch the sides or bottom of the cabinet when the panel is placed in position. Should this happen, a wire may be pressed into contact with another, and it will prove a very difficult matter to trace the cause of the trouble, as the spring in the wires will cause them to separate when the panel is removed for examination. Always wire a set with the variable condensers in their zero positions, otherwise wires may be placed in the space which will be occupied by the moving vanes.

WHEN measuring the voltage of the B battery do not place the voltmeter across the battery, but measure the voltage whilst the set is in action so as to find the voltage "under load."

with a strong solution of ammonia or baking soda. This will neutralise any acid remaining.

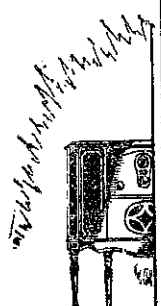
Flush it again with water and then set the wet battery in the sun or some place where a free circulation of air is available, where the excess water will quickly evaporate.

Charging the A Battery.

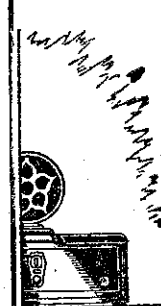
IT is advisable to open the doors of a console or cabinet while charging the A battery, so as to allow an ample circulation of air, by which the gas and heat from the battery and the charger may be carried away. If the gas is allowed to collect in a closed space, such as is found in a console, it becomes a source of potential danger, since it is highly inflammable. Heat generated by high capacity chargers will soon warp the cabinet to a very serious degree if ample ventilation is not provided.

Quite a good idea is to have a bottle of an alkaline solution, such as baking soda or ammonia, beside the storage battery. Frequent testing of the storage battery with a hydrometer will eventually get some acid on the carpet or other furnishings nearby. If nothing is done to neutralise the acid drippings a hole will be burnt in the carpet or the floor discoloured.

If the bottle of an alkaline solution is handy, a liberal quantity may be placed on the acid, which will immediately neutralise it and effectually prevent any damage. A solution of baking powder of the proper strength may be made by dissolving in a quantity of water. It is best to allow a layer of



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I HAVE a three-valve set which has developed a grating noise. I have a new B battery and a wet A battery. I have disconnected the aerial and earth and turned off the rheostat, but left the set going, and still the noise continues.—**PUZZLED.** (Christchurch).

ANSWER: There appears to be a faulty component. Test transformer resistances, condenser, etc., by the phone and cell method.

The Ground Connection.

"**IMPROVER**" writes: Could you tell me how to fix a ground wire to a kerosene tin in order to make the earth described in the "Radio Record" some time ago?

ANSWER: Take a kerosene tin with the top on. Cut a small hole in this, sufficient to allow a length of down-pipe to be pushed in. Solder this to the tin in order that there might be few gaps in which the soil can creep. Now bury the tin about 5 feet in the ground, leaving the down-pipe projecting above the ground. It is quite an easy job to solder a piece of thick stranded wire on to this pipe, and then fill the tin with water and keep it filled by means of the pipe.

A Buzzing Sound Heard.

EACH time I connect up my receiver, (writes T.S.E., Blenheim), I hear a loud, buzzing noise, which ceases when I disconnect the B, and connect it again.

ANSWER: It is quite apparent that there is a faulty component in the set and that the buzzing represents the current bridging the gap caused by the break. When this has been bridged by the expansion of the metal, the set will work O.K. Test all the components, particularly the trans-

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Questions and Answers

former, by the 'phones and cell' method, and the trouble should be easily located.

Audio Valve Rectifying.

A. L. S. (Kilbirnie), writes stating that he has made "Pentode's" three-in-one set. He has been more than satisfied with the volume, but is unable to stop the valve rectifying. He has tried all the published suggestions, but has not had success.

ANSWER: The difficulty is hard to eliminate because the set is being used so close to the station. If, as the correspondent remarks, his set is going satisfactorily, he will have to leave it at that.

Reaction Condenser Useless.

"**HARMONICS**" (Levin) writes:—"I have a three-valve (1-V-1 neutralised) set, and the other day I purchased a dull-emitter power valve. This increased the volume at least 200 per cent., but now my reaction condenser is practically useless because when used over about 10 degrees" on the dial a "motor-boating" is started in the phones. Can you tell me how to rectify this?"

ANSWER: It is apparent that there is something in the set that is not functioning as it should do. Test the grid leak and all the grid returns. Try a by-pass condenser between the primary of the audio transformer and between the B positive terminals and earth. The detector voltage should be kept low, while the use of a high frequency choke between the first audio transformer and the tickler would probably clear things up. If this high frequency choke is used, a condenser should be connected between the transformer end of the choke and the earth. This connection is shown in an article on reaction, appearing in another part of the paper.

Set Out of Neutralisation.

"**NGAIO**" (Wellington), writes stating that he has made the Brown-Drake and has been very pleased with the results, but adds:—"I started off with 15 turns on the tickler, have reduced to 13, but still find oscillation rather fierce. One point rather puzzles me: Sometimes the set goes into oscillation on turning the tickler down from the right-angles position, and at others it does not oscillate on turning down (i.e., to the right), but only on turning up (to the left). Why? Sometimes it is impossible to get her out of oscillation without detuning; should I still further reduce the number of tickler turns?"

The correspondent then asks for a diagram of the condenser method of controlling reaction. This is given in an article appearing elsewhere in this issue. His troubles seem to be not with the number of turns on the tickler, which, by the way, should not be reduced too much, but that his set requires neutralising. Unless the set bursts into oscillation when the reaction knob is turned low, the number of turns should not be reduced.

Coil Specifications.

"**G. P. T.**" (St. Albans) writes asking for the particulars of the coils for "Pentode's" three-valve set described in our issue of January 18, 1925.

ANSWER: The aerial coil is space-wound on a three-inch former with 20 s.w.g. wire. Put on 65 turns, and tap at the eighteenth turn. The secondary, if 20 gauge wire is used, requires 53 turns, if tuning with a 005 condenser, 68 if a 0003 condenser, and 90 if with a 00025 condenser. If 22 gauge wire is used, put on 49 turns, 63 turns, or 85 turns, according to the condenser used. The approximate tuning range of the set will be from 200 metres to 550 metres.

Which is Most Efficient Aerial?

D. G., Wellington: My present aerial runs over the top of my house. I propose to alter it in order that I may get more efficiency. If I were to erect an aerial with two wires 2ft. apart, do you think this would be better? or would four wires 48ft. long be still more efficient?

ANSWER: The best aerial will be clear of all earthed objects and about 30ft. high. If a multiple aerial is desired, the wires should be 6ft. apart and separated by non-conductors. They may be brought together for the lead-in, but make this as short as possible. The question of aerials was dealt with in our special issue of December 14.

B Battery Running Down Rapidly.

P. E. N., Marlborough: I am using an American factory-built set designed for American valves. I have recently changed to low consumption valves, and find that my B batteries have dropped from 40 to 20 volts in a month. What is the cause of this?

ANSWER: The particular set in question is unsuitable for any other valve than the American valves specified, and the change to the low filament consumption valves should not have been made. This would account for the sudden drop in voltage, greater drain being put on the plate. At the same time, there may be a short circuit somewhere in the set. Test the by-pass condensers by the 'phones method, and at the same time, check over all the valves and valve sockets. It is quite probable if the correspondent uses the 201A valve instead of those he is at present using, he will have much better results.

G. T. F. (Cambridge) writes stating that he has changed the bright emitter valves used in his factory-made set, which is the same as that of the correspondent above, to dull emitter valves. He adds: "I was told that if the D and V dials (the rheostats controlling the filaments of the valves) were left on 100, the A battery would last longer." This is incorrect, as the lower the filaments are turned the longer the valves will last. He remarks that he notices no increase in volume after he has passed the division marked 5. This indicates that his valves require a lower voltage than that supplied by his accumulator. Under these circumstances, if he burns his valves with the battery full on, he is not only losing efficiency of tone but is burning his valves out to no purpose. As remarked in the previous letter, the change to dull emitter valves, taking that these are the English or Continental valves, should not be used in this particular factory-made set.

A. C. T., Havelock North: I have been unable to obtain ammonium phosphate for the trickle charger described by "Pentode." Where may I obtain it?

ANSWER: Any of the city chemists would be able to supply it. Try Kempthorne Prosser's, Wellington.

4-Volt Valves in 6-Volt Batteries.

"**IN TROUBLE**," Miramar, writes:—(1) As the 80-ohm rheostat cuts down the 6-volt current to 4 volts, does it mean that if I use a 80-ohm rheostat on my circuit, I shall have only 4 volts on the filament when the rheostat is turned on full? Yes.

(2) I would prefer to use a fixed resistance on the 4-volt valve as then there would be no chance of the valve being burnt out if the audio rheostat was switched full on. Could an amperite be used?

ANSWER: Yes. A fixed resistance may be used and the amperite type would be particularly suitable. There is a particular number of these for each valve, so that it will pay you to consult a reliable dealer before purchasing the particular resistance you want.

(3) Is it permissible to use a variable condenser across the primary of the aerial coil? Yes. The only difference will be to weaken the strength.

What are Harmonics?

"**HARMONICS**," Levin: Will you tell me the cause and the number of harmonics a station has, or, in other words, give me a general explanation?

ANSWER: A harmonic is a frequency which is a multiple of another frequency. The first frequency is called the fundamental frequency. A frequency twice as great is called the second harmonic, one three times as great is the third harmonic, one four times as great is called the fourth harmonic, and so on. Starting with a fundamental frequency of 600,000 cycles or 600 kilocycles, for an example, its second harmonic would be 1,200,000 cycles or 1200 kilocycles. Its third harmonic would be three times the fundamental, or 1800 kilocycles, the fourth harmonic being four times the fundamental of 2400 kilocycles. In broadcasting it is desired that the transmitter send out a carrier wave of a fundamental frequency only. No harmonics are desired, in fact they are very harmful, since they too are transmitted and may be received if sufficiently strong. Taking the series of harmonics of the fundamental frequency of 600 kilocycles mentioned in the foregoing paragraph, it is interesting to trace the frequencies and wavelengths of the several harmonics. The second harmonic of 1200 kilocycles corresponds to 250 metres wavelength. The third harmonic of 1800 kilocycles forms a wavelength of 166.6 metres. The fourth harmonic of 2400 kilocycles is at a wavelength of 125 metres, while a fifth harmonic of 3000 kilocycles would have a wavelength of 100 metres. In each case the approximate wavelength is found by dividing 300,000,000 by the frequency in cycles or by dividing 300,000 by the frequency in kilocycles.

The "Three-in-One."

HAVING made up your Three-in-One set there are one or two points that I should like a little further elucidation upon. They are:—

1. Using a carborundum crystal, would it be advantageous to use a large ratio transformer, say 6-1, or would distortion creep in?

ANSWER: Providing the curve is relatively flat the ratio may be high.

2. What are the relative merits of moving tickler and throttle control regeneration?

ANSWER: Base smoother, alters timing. (See article on regeneration.)

3. Is the double grid valve suitable for use in this set

ANSWER: It would be suitable providing there was not a great deal of volume to be handled.

My aerial is fairly proficient, but, living in an upper story I have a very long earth, about 50 feet, which increases the external resistance of the set. Still, my results have been very good. 1YA roars in on the speaker, while 1ZB, 2YA, 3YA, and 2FC have, under favourable conditions, come in with very fair 'phone strength.

However, I think I could do much better, for I have noticed that when I tune in a distant station—say 2YA—and turn up the filament a little, the set begins to whine, the same thing happens if I turn up the condenser. In other words, to tune to a higher wavelength than the local the rheostat has to be turned down with a consequent loss of signal strength. Substituting an H.F. choke for the grid leak makes no difference, neither does it stop when I disconnect the aerial and earth. At present I am using a carborundum crystal without brassing battery and a "free grid," which I find gives clearer reception. Can you enlighten me on this point, please?—D.J.J.

ANSWER.—To overcome this difficulty by the addition of grid bias, check the tickler coil. If the set oscillates at a low reading some turns can well be taken off; if at a high, more added.

Shortwave Reception.

I HAVE a locally-constructed three-valve short-wave set, which is not going too well. On Wednesday and Thursday night I was listening-in to a foreign station, PCIL, on about 20 metres. It was very mushy and distorted. I could not clear it up at all. "Allo, allo, allo," was all I could make out. I use dull emitter valves, 90 volts, B dry batteries. Is this all right, and can you suggest something to bring in American stations, as I have not heard them yet since I added this short-wave set in October last to my possessions. I get good results with a factory-made six-valve set on the broadcast band. Could you advise me how to test audio frequency transformer? It does not seem to have much kick.—NEW CHUM (Otago).

ANSWER.—Judging from the reports, short-wave reception is bad just at present, and this is probably your trouble, for everything you report on seems so. However, as is suggested, a component may be at fault. Test these by the 'phones and battery method described in the Beginners' Corner recently.

A DIRTY lead-in is a graveyard for distant signals.

AMPLIFICATION at low frequency means the magnification of those currents which represent speech or music, i.e. the magnification of the output from the detector (whether crystal or valve), gramophone records, etc.

Hawke's Bay Notes

THE Hawke's Bay Radio Society held its usual monthly meeting on January 29, when, in spite of the hot night, there was a good attendance of members, and quite a number of important matters were discussed. As proof of the live activities of the society, reports on various movements were presented, these including a most successful Christmas tree and the installation of the equipment in the Hastings Memorial Hospital. This equipment, by the way, has proved a great success. In fact, one of the staff told the writer that since the radio had arrived the patients who were experiencing its joys for the first time were not keen to leave the institution. A few nights ago the matron tuned in a Japanese station at good speaker strength, and everyone was delighted.

THE Radio Society held a very successful picnic outing on Sunday, January 27, and about 100 members and their friends had a great time in real Hawke's Bay weather. After this venture it is pretty certain that an annual picnic will be a feature of the future.

ANOTHER move by the society to foster the social side is the holding of a ladies' night on February 27. A great musical programme is being arranged, and for once at least static and interference will be forgotten in the joys of listening to the talent the society can produce. The move is full of promise, and it should be a good evening.

AT the last meeting of the society one of the moves suggested to the society was to inaugurate a battery service station for members, the idea being to get charging at a cheaper rate, but members did not take kindly to the proposal in view of the many obstacles which preface it. The subject was "tabled," however, till next meeting, to enable the sponsor of the idea to be present to give his views.

ANOTHER matter discussed was that of local reception and a local broadcasting station. The secretary reported that there was every prospect of Mr. Ball, editor-announcer, visiting Hastings, and it was decided to hold over the discussion on the station until after Mr. Ball's visit. A special invitation was extended to Mr. Ball to make the trip.

THERE has been a fair amount of controversy here over 2YA's experiment with master oscillator and crystal controls. There is a great difference of opinion, but the most listeners seem to favour master oscillator, at least at night, although many hold that the crystal scores for afternoon reception. The Radio Society members have undertaken to furnish the secretary with a report of their observations, and these will be forwarded to the Radio Broadcasting Company.

RECEPTION here lately has not been startling. There are still many complaints regarding distortion and fading from 2YA. No fault is apparently found with the Auckland and Christchurch stations. The "Aussies" have been "in and out," and on a couple of nights during the past week, 2BL

Beacon Station at Start Point

Direction Finding in the Channel

A WIRELESS beacon installation built at Start Point by Marconi's Wireless Telegraph Co., Ltd., for the Corporation of Trinity House has just been completed.

This type of station transmits a special signal on an exclusive wavelength of 1000 metres for the benefit of ships equipped with wireless direction-finders. The Start Point installation is the seventh of its kind now established round the British coasts, others having been installed at Round Island, Skerries, Spurn Lightship, The Casquets (Channel Islands), Start Point, Bar Lightship, Albatross (Coninbeg, Ireland), and in the near future beacon stations of the Marconi type will be installed at Sule Skerry (Scotland), Lundy North, Dungeness, Kinnaird Head (Scotland), Cromer, South Bishop, and other places, in addition to similar stations for which orders have been received in other parts of the world.

The completion of the Start Point transmitter means that very effective cross-bearings can now be taken by ships using the three Channel stations as their fixed points, and they can thus obtain a sequence of bearings whenever required by the navigators and can be sure of their position right up the Channel.

Since the wireless direction-finder has become firmly established and more generally employed on the merchant vessels of the world the demand has arisen for the erection of permanent installations situated at places of advantage from a shipping point of view round the coast and whose function it is to send out a recognised signal at convenient intervals purely for the purpose of enabling ships fitted with direction-finders to take their bearings and thereby find their exact position when approaching the coast.

One of the great advantages of the system of position finding in which a

has been up to its best form, coming through with great volume. 1YA, by the way, is being badly upset by the heterodyne of a "Yank." At the moment the writer has been listening to the Auckland station, but the Yank is causing distortion, for 3YA is as clear as a bell.

wireless beacon station of the Marconi type at a known position is used in conjunction with a direction-finder on board ship is that the signals are broadcast in all directions and a direct bearing can therefore be taken on the transmitter from any direction at every signal sent out by it. This method is, therefore, particularly suitable for lightship installation, as the swinging of the ship's head does not affect the accuracy of the bearing obtained, and navigators can lay off their wireless bearings on familiar points on the chart.

The Marconi beacon transmitter of the type fitted in the British Isles has a power of 500 watts and is operated on a wavelength of 1000 metres, which is the specified wavelength for wireless beacon stations, and the whole equipment is automatically controlled by a master clock for transmitting groups of interrupted continuous wave (I.C.W.) signals at pre-arranged intervals.

Broadcasting in America

Effect of Re-allocation

ON November 11, the Federal Radio Commission of the United States, in compliance with the 1928 Davis Amendment to the Radio Act, redistributed the nation's broadcasting facilities equally among the five radio zones and proportionately among the various States according to population. This was done by re-allocating the wavelengths, power and broadcasting time of the stations.

"Radio Retailing" endeavoured to ascertain the effect of the re-allocations on the radio service to listeners. In order to do this, questionnaires were sent to radio dealers in every State. The answers to these questions, together with information received from other sources, indicate that, on the whole, the broadcasting situation has been much improved. There are local conditions in certain small areas which still have to be remedied, but it should be remembered that these are due, not to the re-allocations ordered by the commission, but to the equalisation provision of the Davis Amendment. It is also generally admitted that sufficient time has not elapsed for perfect adjustment to the new requirements and that eventually the benefits of the re-allocations will be more obvious.



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Cookery Nook

Canary Pudding.

CANARY pudding is a light, nourishing pudding, appreciated by the small fry on account of its pretty appearance.

First balance in the scales sugar and butter together against the weight of three eggs; flour against two eggs, and include in your ingredients the rind of a lemon and three eggs.

Melt the butter till it is quite soft, but not oily. Stir in the sugar and lemon rind finely minced. Gradually mix in the flour till all is well stirred.

Now whisk the eggs and add to the mixture. Beat it all up quickly and

thoroughly. Pour into a buttered basin, cover with a greased paper and cloth, and boil for two hours.

Serve for the nursery with strawberry jam, sauce or golden syrup. Cranberry or black-currant sauce is not quite so cloying for those who have not the "sweet tooth." The sauce is made by heating up the jam in a saucepan with a little water added. The golden syrup need only be stood in its tin on the hob ten minutes before it is needed.

The Hidden Mountain.

THIS makes a pretty Sunday supper dish. Beat the whites and yolks of six eggs separately. Now mix them together and beat again. Don't attempt to save time by beating them all up together in the first instance, for this is the most important part of the recipe. Add a few slices of citron, cream and sufficient pounded sugar to sweeten.

Mix everything well together and pour into a buttered frying-pan and fry as you would a pancake. But it should be three times the thickness of an ordinary pancake. Fry for eight minutes and then it is cooked. Mask it with jam and serve cold.

Scolloped Chicken.

BOIL a chicken or capon until it is very tender, and strip all the meat from the bones. Let it get cold, and then cut it up into fairly small pieces, but do not mince it. Mix two tablespoonfuls of fine flour with one of butter; melt this in a pan and stir in a breakfastcupful of the liquor in which the bird was boiled. Season with finely-chopped Spanish onion, parsley, salt, and red pepper. Strain, put back in the pan, and add a breakfastcupful of cream, or milk, and then put in the chicken-meat and cook for a short while. Touch up with a tablespoonful of Worcestershire sauce or twice that amount of red wine. Put the mixture into a buttered fireproof dish, sprinkle with baked breadcrumbs, and brown in a quick oven.

Spanish Cream.

THREE cups of water, 6 tablespoons "Anchor" Milk Powder, 3 eggs, pinch of salt, 2½ tablespoons of gelatine, ½ cup cold water, Vanilla flavouring. To make milk: Make the necessary quantity into a paste with a little water, then add water up to the required amount, stirring until dissolved. Method: Scald the milk, add it to the slightly beaten egg yolks, sugar, and the salt. Cook until the mixture coats the spoon. Soak the gelatine in the half-cup of water for about 5 minutes. Add it to the hot custard; stir until gelatine is thoroughly dissolved. Set to cool. When the mixture begins to thicken, fold in the stiffly beaten egg whites. Flavour vanilla. Pour out into a mould. Put on ice to cool. Serve with cream.

THE WOMAN'S POINT OF VIEW

By "VERITY"

A Children's Theatre

The Lost Ones

MISS JOAN LUXTON, a young actress hailing from Australia, has earned for herself the title of "A Theatre Fairy Godmother." According to an English journal, she has been running the Children's Theatre in Endell Street, London, for some considerable time. This charming young actress is still only 24 years of age, but she has already crammed a good deal of experience into her young life. She has been acting ever since she was 15 years old, and she hails from Australia, where she received her early training as a dancer. On reaching England she studied at the Academy of Dramatic Art in Gower Street, and after touring in several plays she also acted in London at the Everyman and the Apollo.

But it is as the founder, manager, and one of the principal performers of the Children's Theatre that Joan Luxton has thus early come to be regarded as a real theatrical Fairy Godmother. It certainly was a very bright idea of hers to start a theatre for young folk which should provide exactly the right kind of dramatic fare that really appeals to children.

No sooner had this real "brain-wave" occurred to this young actress than she set to work, with a strong little band of personal friends and helpers, to carry it out. A backer was secured—blessed be the name of this generous and public-spirited friend of London's children!—and a vacant shop in Endell Street was quickly transformed into an excellent little theatre.

Although it is unique in being the smallest theatre in England to be licensed by the Lord Chamberlain and the L.C.C., it is, nevertheless, perfectly equipped with proper stage lighting, real footlights, scenery, curtains, etc.; and its comfortable tip-up seats are just right for small occupiers. There is even a real miniature box office, where children may go and book their own seats—the price of which varies from 3d. to 1s. 2d. for the small folk.

As there is accommodation only for about 115, the financial difficulties have been tremendous, and with the high cost of advertising making the latter almost entirely prohibitive, it has been no easy matter to keep this splendid little venture going.

But the excellence of its programmes and the enthusiastic appreciation of the juvenile audiences have been the best advertisements. The prices have necessarily to be kept low and within reach, not only of the smaller-income parents, but of the children's own pocket money. The running expenses are kept down to the lowest level consistent with the perfect efficiency aimed at, and with this object in view every member of Miss Luxton's jolly company performs some other job besides that of acting. They not only act, sing, dance, or play the piano, but are their own scene-painters, costumers, theatre attendants, electricians, and stage hands.

Somewhere is music from the linnet's bills,

And through the sunny flowers the bee-wings drone,

And white bells of convolvulus on hills Of quiet May make silent ringing, blown

Hither and thither by the wind of showers,

And somewhere all the wandering birds have flown;

And the brown breath of autumn chills the flowers.

But where are all the loves of long ago? Oh, little twilight ship blown up the tide,

Where are the faces laughing in the glow

Of morning years, the lost ones scattered wide?

Give me your hand, oh brother, let us go Crying about the dark for those who died.

—Francis Ledwidge.

The delightfully varied programmes usually consist of short one-act plays, folk-songs and sea-chanties in costume, and plenty of mime and dancing. Fun and beauty are cleverly mingled, while at the same time good dramatic taste is unobtrusively fostered.

Youngsters are keen critics, and at the Children's Theatre it has been found that the really best items are always those which are most appreciated.

The success that has already attended Miss Luxton's brave little venture makes one hope that it will lead to a wider spread of the movement, and that the time is not far off when we shall have children's theatres and children's kinemas not only in every district of London, but also in all towns—happy little theatres where, as in Miss Luxton's pioneer one in Endell Street, young folks may enjoy really suitable dramatic fare full of fun, adventure, and beauty, and in which no objectionable features are ever allowed to intrude.

You can't Fry over a Valve



But a Radio Set can be a great help to the cook for all that. The other night's Broadcast suggested that housewives should send for the new "Anchor" Recipe Folder. Simply write "Anchor," Box 844, Auckland.

ANCHOR SKIM MILK POWDER

When your throat pricks

take—

Pulmonas

RELIEF BY INHALATION

FOR COUGHS AND COLDS

Annotations of Annabel

DEAREST:

The year's at mid-summer and sales at their fell worst. All expansive, placid, pleasant ease of normality is exploded in a burst of cheapness, female friends are distraught, values vary with every wind that blows, and equilibrium of everyday goes up the spout.

Bargains are to be had. Sure thing, in the parlance of our cousins once removed. Of that bustling fact there is no manner of doubt, unless warily the foolish virgin tarries too long.

'Tis the unlit lamp and the ungirt loin,

Though the end in sight be a vice, I say,

that leave one in the lurch at the summer sales. So quit contemplative meanderings and be in with the milk-bottles, or thereabouts; emulating Elsie, that maiden fair to outward view, yet of an unparalleled acumen when she finds herself in the shopping area of Lambton Quay. Already she has achieved various out-and-in garments of cut and weave calculated to arouse dormant felinity in those feminine detractors who, like the poor, are always with us; so accurately adapted are the water-colour tints selected to enhance the corn-colour of her hair and Titania-ish proportions. One small frock, from exclusive emporium that seldom opens its doors to vulgarity of bargain-hunting, is fashioned from our sartorial ally, the true and trusty crepe de chene.

OF pale and gleaming maize-colour, flared and pleated, its line emphasised by cunning criss-cross of stitchery, this good gown became the property of the wise maid, together with set of matching lingerie, at quite absurdly low out-of-pocket expenses, to use a legal term confronting us in those startling bills of costs that occasionally come our way, it being a rule of the great game that we pay high for our mistakes, as well as for our fun, in the valley of disillusion that is life.

WHY do people arrive late at the theatre, thereby making themselves unpopular with, and irritating the artistic susceptibilities of those to whom the play's the thing? 'Tis an ancient and recurring problem, exemplified again and yet again. Par exemple, last week, as we sat in the

stalls and composed our moods to a mood of gay good humour appropriate to appreciation of the approaches of Falstaff to the lovely ladies of his desire, people hurtled and bustled and hustled through the semi-darkness and the first act, treading with inhuman unconcern upon the toes and tempers of those who paid good money for good seats.

LIKEWISE there are Those Who Laugh and Chat at the wrong time. Two such gay and glib flappers sat in front of us, bobbing and wriggling and giggling, as they propounded possible matrimonial chances which, judging from vacuous profiles, will prove nebulous indeed. Evangeline's patience is not that of the Biblical exemplar, and "Jabber, JABBER, JABBER!" she suddenly ejaculated, with extreme verve and audibility; which primitive method unexpectedly quelled the chatty flappers and reduced them to comparative inoffensiveness.

SO that at long last we found great enjoyment in Mr. Allan Wilkie's admirable presentation of the fat and funny Falstaff. Gross and jolly was that amorous Bacchus, with his mighty laugh and leer, his rolling, reeling gait and carriage of too, too solid flesh.

THE two charming objectives of his evil intent were delightful in alternating moods of cajolery, coquetry and eventual flouting; but, recalling the leading lady's sinuous grace and unforgettable tragic power as Antony's lovely and terrible Serpent of Old Nile, and her exquisite, heart-searching envisaging of that Hermione who was not "prone to tears," one reflects that perchance her aura does not ally itself with that of the frisky, fascinating Mistress Ford.

A voice of melody and quite exquisite articulation are the enviable attributes of Mr. Dennis Barry. He being the present moon of my delight, I will strain a depleted exchequer and see him in the great love story of the world; for this young treader of the boards possesses grace, charm and that debonair youth which are, or should be, essentials in Shakespeare's Romeo.

Your

ANNABEL LEE.

Odds and Ends

Jade Bag Mount.

TWO foxes in carved jade make an effective fastening on a bag of black reindeer skin. The bag is made in the pochette shape, and designed for evening wear. It would look particularly well when used with the all-black velvet toilette, favoured by so many women at the moment.

Chenille and Chiffon Flowers.

THE newest flowers for evening frocks are composed of large chiff-

on petals, studded with graduated chenille spots in the same colour of the flower. The flowers are particularly effective in white, the chenille giving the appearance of a dusting of snow. They should be worn low down on the shoulder, in the front of the gown.

Beetle Pendant.

A DIAMANTE beetle posed on crystal leaf makes an original pendant for a necklace of small, round diamante and crystal beads. The necklace forms a chain to hang to the waist, which is the latest length for such trinkets and is replacing the old choker.

Books.

BROOK EVANS.

(Susan Glaspell.)

NOVELS and plays by this writer are well and affectionately known to a public both in England and America. So that a new story from her pen is welcomed with interest, and this latest interesting narrative will not disappoint.

Though there is much of passionate love in its many manifestations, this is rather the description of a mother's devotion than the ordinary love-story. The interest does not flag, and diverse characters are limned with practised and convincing skill.

A girl of the prairies, escaping from stern religious regime of her poor home, meets her lover by the beautiful waters of the brook after which she names her child. Him she loves with all her soul and body, and to him she gives herself, for they are to be married in "the fall." Joe, the debonair, brown-eyed lover of Naomi, is killed in a tragical harvesting accident; and she, distraught, is forced into marriage with the ungainly, unattractive Caleb, so loyal and kind, who is willing to marry her in spite of the knowledge that she carries the child of her dead lover.

So they sail away, and it is with the child, Brook Evans, that the greater part of the story concerns itself; her adventures as a missionary in China, her marriage, and subsequent years in England. Finally, her husband dead, a beautiful and mature woman, she gives herself, as her mother before her, to the man she loves, and goes off with her passionate Icelandic to a wider world of dreams and hopes and banished regrets.

Fierce, protective maternal love is depicted with skill and knowledge—love that pathetically and wrong-headedly strives to bestow the wine and colour of life upon the adored daughter; but, as often in our knowledge,

The Quiet Song

*Peace, God's own peace,
This it is I bring you
The quiet song of sleep,
Dear tired heart, I sing you.
Dream, softly dream,
Till solemn death shall find you,
With coronals of roses
Tenderly to bind you.
Peace past understanding
Dear tired heart, I bring you;
The quiet song of evening
Softly I sing you.*

—Ivor Campbell.

Howlers

The "broad arrow" is one that always hits the mark.

A "Job's comforter" is a thing that babies suck.

Drinking water can be obtained from sea water by putting the sea water through a sifter.

The work of an auditor is—to keep order, to see orders through, to take orders down.

Do you know anything for which Stirling is famous?—Yes, silver.

Tennyson wrote "Break! Break! Break!" in memorandum of his friend Hallam.

the girl turns away, preferring her own way; her young vision, freedom to make or muddle her destiny as she will. And, by the irony of things, she reposes her heart's trust and affection in "Father," the quiet, grey Caleb, that dull Quixote, and cares nothing for the memory of Naomi's Joe, dead in the pride of his youth.

The story perhaps is not of great moment; but characterisation of divergent types is excellently well conceived and carried out.—R.U.R.

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When the time comes for you to pack up, don't leave your happy times behind—bring back your holiday in your 'Kodak'. Bring back the glorious scenery, the exciting incidents, the friends you met, the romping children, the picnic parties—bring them all back in happy 'Kodak' snapshots.



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Next Week's Features

Notes from 1YA

THE principal vocalists for the Sunday evening concert which will be broadcast after the relay of the service from St. David's Church (where the preacher will be the Rev. D. C. Heron, M.A.) will be the Hazel-Sutherland Duo.

A SPLENDID operatic programme has been arranged for Tuesday evening, which will mark the welcome reappearance before the microphone of the brilliant young Auckland tenor, Mr. Birrell O'Malley, who will sing operatic arias from "Faust" (Gounod) and "Rigoletto" (Verdi). The programme will be further strengthened with operatic selections to be rendered by Miss Madge Clague (contralto), lately arrived from Sydney, and Mr. Walter Brough (baritone). Elocutionary items to be performed by Miss Gladys Gamman include "The Last Token" (Eaton) and "Old Pierrot" (by Levey). Orchestral selections will be played by the Studio Orchestra, while Mr. Cyril Towsey will be heard in a piano solo, "Rondo," by Field. Mr. A. B. Chapell, M.A., will again speak on the "Maori," the subject for this evening being "His Music."

ON Wednesday evening the Auckland Artillery Band will again perform from 1YA after a long absence. Listeners will remember with pleasure the splendid programmes broadcast last year from this station, and the reappearance of the band before the microphone will be hailed with delight by all lovers of band music. The band will be under the baton of Mr. Wynne Smith, and the selections to be rendered include "Arcadians" (Monkton), "The Bohemian Girl" (Balfe), "Smithy in the Wood" (Bidgood), and "Ramona" (Wayne). Assisting the band will be the ever-popular Clarion Quartet, their items including quartets, duets and solos.

THOSE popular vocalists, The Olympians, will perform the major portion of Friday evening's programme, in contributing a splendid variety of quartets and solos. They will be assisted by Miss Maisie Carte-Lloyd, the well-known elocutionist, who will include among her items "The Ballad of Splendid Silence" and "Ring Out, Wild Bells." Instrumental selections will be played by the Studio Orchestra, including "The Coppelia Ballet Suite" and selections from "Lilac Time," while a number of selected gramophone records will also be introduced.

A SPLENDID variety programme has been arranged for Saturday evening, including humorous selections from Mr. F. W. Barker, who will contribute Mel. B. Spurr's laughable "After the Ball." Ingall's Hawaiian Orchestra will play popular music and Hawaiian airs. Miss Hilda Stansfield, a young contralto of outstanding ability, will make her initial bow before the mike this evening, and her efforts on the air will be looked forward to by all listeners.

Thrilling Radio Drama from 1YA.

Outstanding on this week's programmes will be the presentation on Thursday evening of the dramatic story "Galapagos." It will be produced for the first time in New Zealand by the Auckland Dramatic Players, under the able direction of Mr. J. F. Montague. "Galapagos" is the true story of the ill-fated Norwegian barque, "Alexander," on its trip from Australia, its subsequent becalming, drift, and abandonment, followed by the tragic experiences of the crew on the barren isle of Galapagos. No trouble has been spared to present the story with full effects, such as sea chanties, ship's bells, surf effects, and incidental noises, and listeners should therefore eagerly anticipate a novel evening's entertainment. The first portion of the programme will be given over to songs and ballads rendered by Mr. Frank Sutherland (baritone) and Mr. Duncan Black (bass), and instrumental items performed by the Auckland Trio and Miss Ina Bosworth (violinist).



MR. LES. CROFT.

To appear for the first time in radio at 3YA, on Friday next week, will be Mr. Les. Croft, who is in the front rank of vaudeville artists. In mouth organ playing he stands pre-eminent, being champion of Australasia. At the last Christchurch Competitions he was very successful, and his appearance at the demonstration concert, when he gave an exhibition of the possibilities of the instrument, was the outstanding feature

of the evening. Mr. Croft has also toured with the Moscovitch Company and has appeared on various stages in New Zealand as a comedian and eccentric musician, the instruments which he plays being of weird variety. When performing at Hoyt's Theatres, in Sydney, the "Sydney Daily Telegraph" said: "He is certainly a wizard on the mouth organ. What he produces from the instrument is marvellous."

ward to by all listeners. On the instrument side of the programme will appear Miss Molly Wright (cellist) and the Auckland Trio, while the concluding portion of the programme will be given over to a selected programme of dance music.

Notes from 3YA

THE local artists who will contribute to the afterchurch concert on Sunday evening will be Miss Mavis

band will present a varied programme. In view of the nearness of the contest, this excellent combination is at present playing in its best form. In addition to items by the band there will be a cornet duet and solo. The band selections will include the marches, "Brigade of the Guards" and "Boulder City," the overture, "Zauberflöte" (Mozart), and a waltz, "Casino Tanze." Another item will be "Annie Laurie," for which the members of the band will sing the refrain. The cornet duet, "Titlarks," will be played by Bandsmen Annand and Dunn. Another cornet solo, "O Dry Those Tears," will be contributed by Bandsman R. Ohlsen. "Danny Boy," the lovely old Irish air, probably a tender love song of far-off days, and known variously as "Londonderry Air" and "Farewell to Culchullan," will be one of the songs to be sung by Mrs. E. H. Davies on Monday evening. Others will be "Memories of Eventide" and "Loch Lomond and You."

Miss Eileen Grennell, the brilliant young soprano, who has been heard previously from 3YA, will sing "Spring's Awakening," "Beyond the Dawn" (both by Sander-son) and Irving Berlin's "The Song is Ended."

Mr. Robert W. Rofe, who makes his debut in radio broadcasting on Monday evening is a member of the Cathedral Choir. His fine bass-baritone voice will be heard in three different types of songs, "The Blue Dragons," "My Old Shako," and "Glorious Devon." With Mr. Flewellyn and Mr. Jock Lockhart on the programme, much humour can be expected on Monday night.

A MISCELLANEOUS programme will be presented on Wednesday evening, the items comprising popular, classical, and operatic numbers. The vocalists will be the Dulcet Quartet. Miss Hilda Hutt will sing "I Hear a Thrush at Eve" and "The Valley of Laughter." Miss Nellie Lowe's numbers will be "Like to the Damask Rose" and "When the House is Asleep." Tenor solos by Mr. T. G. Rogers will be Verdi's "When a Charmer" and Sullivan's "The Sailor's Grave." Mr. A. G. Thompson (baritone) will sing "Father O'Flynn" and Gaisberg's "Volga Boat Song." Concerted vocal numbers will be "Reverie" and "Break, Break, Break." As a soprano and contralto duet, "Arise O Sun" will be sung.

The Studio Orchestra, under the baton of Mr. Harold Beck, will contribute to Wednesday's programme, among their items being the always popular "Light Cavalry" by Suppe. Other orchestral numbers to be given per medium of records, will be a selection from "Maritana" and Kettelbey's "Sanctuary of the Heart." Piano-forte solos will be played by that accomplished artist, Miss Bessie Pollard.

"Some Museum Meteorites" will be the subject of an astronomical talk by

Spiller (mezzo-soprano), Miss Nellie Lowe (contralto), and Mr. A. G. Thompson. A very choice programme has been arranged. Special among the records will be one by Enrico Caruso, "Agnus Dei," and the whole of the "Peer Gynt" Suite. A Woolston Band concert, items by the Studio Trio, with vocal talent comprising Miss Eileen Grennell, Mrs. E. H. Davies, Mr. Robert W. Rofe, Mr. Jock Lockhart, and Mr. J. J. Flewellyn will be broadcast on Monday evening. It will be one of the best entertainments of the week. The

same gentleman will also contribute further to the evening's programme with a retelling of some old history in "Serious Trouble Over Noah's Ark."

"THE Little Sunbonnet," a pretty and charming song cycle by Herman Lohr, will be presented by Miss Frances Hamerton's Melodious Four on Thursday evening. Full instrumental accompaniment will be provided by the Studio Trio. The remainder of the programme will consist of items of a miscellaneous nature. The composers are practically all modern English. The vocalists of the quartet will all provide solos. Elocutionary numbers will be given by Miss Winifred Smith. Instrumental music will be provided by the Studio Trio. Among the records to be reproduced will be one of exceptional interest, a harpsichord solo played by Ignaz Friedman.

The station will be on the air at 2.30 on Thursday in order to broadcast the opening ceremony in connection with the electrification of the Lyttelton tunnel.

THERE will be considerable variety in Friday's programme. The vocalists will be the Valencia Quartet, who will present vocal items of a miscellaneous nature. There will also be the Happy Duo (in duets at the piano with ukulele), the Studio Trio, Mr. Leslie Croft, who will entertain with all manner of instrumental and variety turns, and Mr. George Titchener, humorist. Worthy of special mention among the songs are the quartets. The solos will include "I Dreamt that I Dwelt," to be sung by Miss Renetta Rings, "The Hills of Donegal," and "Hush-a-Bye Birdie" by Miss Mary Taylor. Mr. W. Bradshaw will sing "Alice Where Art Thou" and "Mary of Argyle." That fine bass, Mr. F. A. Millar, will sing "The King's Highway" and "In Cellar Cool."

"The Happy Duo," who are to entertain with the aid of piano and ukulele, are Misses Dorothy and Edna Johnson, two well-known performers at 3YA. Both are excellent radio vocalists, and they present the brightest and latest popular songs.

On Saturday night 3YA will rebroadcast 2YA.

Notes from 2YA

ON Monday evening a visiting artist from the studio of 1YA in the person of Miss Lola Solomon will be singing. Miss Solomon, whose work is well and favourably known in Auckland, has chosen as her items "Rosa-monde" (by Chaminade), Toselli's "Serena" (a favourite with all types of listeners), and "A Birthday" (by Woodham). The well-known Handel baritone solo, "Hear Me, Ye Winds and Waves," an Irish ballad, "The Snowy Breasted Pearl," and two other ballads, Theo Marzialis' "Absent Yet Present"

Sunday Evening Attraction at 2YA.

Very unique as a radio programme will be 2YA's entertainment on Sunday evening, February 10. It will be contributed mainly by Mr. Allan Wilkie and the members of his company. Incorporated in the programme will be an address by Mr. Wilkie, and all who have previously heard Mr. Wilkie "on the air" will know how interesting he can make a talk on "Shakespeare." The vocalists who will delight listeners with numerous Shakespearean poems set to music, will be Miss Mollie Fenton (contralto), Mr. Dennis Barry and Mr. Roy Hill, the last-named being a popular 2YA artist. There will be instrumental numbers by Mr. Bradshaw Major and Miss Godson.

and the rollicking "Yeoman's Wedding" will be sung by Mr. John Prouse. Mr. Harper, a young elocutionist, who was at the top of the list in the Trinity College's recent examinations for the diploma of A.T.O.L. (elocution) and whose recent performance was so very favourably received, will recite an excerpt from "Travels with a Donkey," written by the famous Robert Louis Stevenson, and a further humorous item entitled "The Groom's Story," from the pen of Sir Arthur Conan Doyle.

One of Burleigh's famous negro spirituals "Sometimes I feel like a Motherless Child" and "Sunrise," by the same composer, together with Kennedy Russell's "Vale" will be the items to be sung by Miss Evelyn Robinson, a young contralto, and a very artistic singer.

Mr. James Fordie, a former operatic tenor, having at one time been a member of the "O'Mara Opera Company," has chosen for his items "Eleanore" (by Coleridge Taylor), "I Heard You Go By" and "Red Devon by the Sea." The orchestral items on Monday evening will include the following: The overture, "Peter Schmolli" (by Weber), Haydn's "Military Symphony," the suite, "Reminiscences of Grieg" (by Godfrey), a ballet suite by Rameau and a musical comedy selection from "Tonight's the Night" (by Rubens).

TUESDAY evening's programme will be of a popular nature. The feature of the orchestral side of the programme will be St. Saens's "Wedding Cake Waltz," a composition written for piano and strings. The soloist in this number will be Mr. M. Dixon, the talented pianist of the 2YA Orchestra. The orchestra will also play the old favourite, "The Caliph of Baghdad" overture, a suite of Elgar's, "The Crown of India," Alford's clever and interesting novelty, "A Lightning Switch," and a musical comedy selection, "Sinbad," by Romberg.

Mr. Austin Blackie, the popular tenor, will be heard again on Tuesday evening in several numbers, and Mrs. W. Blacklock, mezzo-soprano, will also assist on the vocal side of the programme. There will also be appearing Mr. Len Ashton, a talented comedian, who has performed successfully on the American, Canadian, and British stage. He will entertain with some

bright numbers. Mr. Ashton when in Canada was successfully broadcast by several Canadian stations.

THE Wellington Municipal Tramways Band, under Mr. T. Goodall, will on Thursday night provide listeners with an interesting and varied programme, comprising the rather intricate contest march, "Simplicity," a popular selection by Shipley Douglas, "The Arcadians," a descriptive selection by Rimmer, entitled "A Rustic Holiday," and a rousing march, "The Flying Eagle," by Blankenberg.

ON Friday evening the outstanding features of the orchestral items will be Mendelssohn's famous "Fingal's Cave" overture, and a suite by Sibelius, "Pelleas et Melisande," and an operatic selection from "Madame Butterfly."

SATURDAY evening's programme will for the most part be of a light nature, novelty and entertaining items being well interspersed. The Studio Orchestra will open the programme with the popular "Raymond" overture, and will later play two novelty items of more than passing interest, viz., "The Carnival of the Animals," and Fane's "Whistle for Me," with whistling chorus.

Novelty items will be given by Vermont, the well-known bird and animal imitator. Mr. Jack Wilkinson's comic songs will augment what should prove an interesting programme.

Notes from 4YA

ON Sunday evening, February 10, 4YA will relay the evening service from the Central Mission, Octa-

don. The preacher being Mr. W. Walker, and the organist Mr. C. Martin. This will be followed by a recital of selected gramophone records from the studio.

O. HENRY holds a high place amongst short story writers, and his pictures of American life are always entertaining, with an unexpected climax. On Tuesday, February 12, two of these stories, "The Power of the Press" and "A Rubberneck Story," will be told by Mr. Clarence Paine. Other artists are Miss Mary Pratt, a leading contralto of Dunedin, Miss Vanda Duncan (mezzo), Mr. Norman G. Lennon (bass), and Mr. R. A. Mitchell (tenor), who will present a budget of well-known songs.

A VARIED and popular programme will be presented on Wednesday evening. The mezzo-soprano solos to be sung by Miss Molly Vickers will be "Coo" (from "The Country Girl"), "Wandering" and "Dedication." Miss Dorothy Skinner will sing Brahms's famous "Sapphic Ode." Mendelssohn's "Oh Rest in the Lord" and "My Task." Tenor and bass solos will be sung by Mr. J. Swan and Mr. Neil Black respectively. There will also appear Mr. Hugh Dalziel, playing the marimbaphone, and Mr. Ted Heaney, playing the piano-acordion. Mrs. Ernest Drake will play pianoforte solos.

ARTHUR SOMERVELL is one of England's foremost composers, and he certainly has given of his best in the song cycle "Wind Flowers." This work is written round some very beautiful poems, and is full of delightful harmonies. The cycle will be given by the 4YA Harmonists on Friday, February 15, and in addition the artists will sing solo numbers. The 4YA Broadcasting Trio will again be heard in instrumental trios and solos, and Miss Joyce Houls, a talented young elocutionist will be heard in "Hero of Commune," by Browning, and in a scene from "Twelfth Night."

ON the concert platform on Saturday evening to precede the dance music session (changed from Friday night) will appear Miss Thelma Blackman in a number of light popular songs, Mr. J. A. Paterson, a very good Scottish comedian, and Miss Sheila Neilson and Mr. J. B. McConnell, who will give comedy sketches.

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Full Programmes for Next

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Sunday, February 10

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

- 3.0 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Selected studio items.
 4.30: Close down.
 6.0: Children's session conducted by Uncle Leo.
 6.55: Relay of service from St. David's Church—Preacher: Rev. D. C. Herron.
 Organist: Mr. E. C. Oraston.
 8.30: Orchestral—Royal Albert Hall Orchestra, "La Boutique Fantasque" (Rossini Respighi) (H.M.V. Record D1018).
 8.38: Contralto solo—Miss Phyllis Hazell—"Whatever Is, Is Best" (Lohr).
 8.42: Violin solo—Heifetz, "Ave Maria" (Schubert) (H.M.V. Record DB1047).
 8.46: Chorus and orchestra—Chorus and Symphony Orchestra, "Twilight of the Gods"—Hagan Summons the Vassals (Wagner) (H.M.V. Record D980).
 8.54: Tenor solos—Mr. Lambert Harvey, (a) "Where'er You Walk" (Handel). (b) "Daughters of Jerusalem" (Jamaican).
 9.2: Cello solo—Pablo Casals, "Le Cygne" (Saint-Saens) (H.M.V. Record DA776).
 9.5: Contralto solos—Miss Phyllis Hazell, (a) "For Your Dear Sake" (Lennox), (b) "From the Land of the Sky Blue Water" (Cadman).
 9.13: Chorus—Chorus and Symphony Orchestra, "Pilgrim's Chorus" ("Tannhauser") (Wagner) (H.M.V. Record D1074).
 9.21: Tenor solo—Mr. Lambert Harvey, (a) Recitative, "Deeper and Deeper" (Horne) (H.M.V. Record EA239).
 9.25: Band—Band of H.M. Coldstream Guards, "East and West March" Still" (Handel), (b) Aria, "Watt Her, Angels" (Handel).
 9.30: Close down.

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

- 3 p.m.: Afternoon session—Selected studio items.
 4.30: Close down.
 6.0: Children's Sunday service, conducted by Uncle George.
 7.0: Relay of service from St. Andrew's Presbyterian Church. Preacher, Rev. R. Howie, B.A. Organist and choirmaster, Mr. Frank Thomas.
 8.15 (approx.): Special "Shakespearean" programme by Mr. Allan Wilkie and members of his company.
 Overture—New Queen's Hall Orchestra, "The Merry Wives of Windsor" (Nicolai) (Columbia Record L1723).

- Vocal solos with violin obligato—Mr. Dennis Barry (violin obligato. Miss Godson), (a) "O Mistress Mine" (from "Twelfth Night") (Quilter); (b) "When That I Was a Tiny Boy" ("Twelfth Night") (Traditional).
 Instrumental—New Queen's Hall Light Orchestra, "Incidental Music to 'The Merchant of Venice'" (Rosse) (Columbia Record L1510): Part 1. "Prelude No. 1." Part 2. "Portia Intermezzo" and "Oriental March."
 Contralto solo—Miss Mollie Fenton, "The Willow Song" ("Othello") (Sullivan).
 Instrumental—Festival Orchestra, Nonconformist Choir Union Festival, Crystal Palace, "Dance" ("Othello") (Coleridge-Taylor) (Columbia Record 9118).
 Tenor solo—Mr. Roy Hill, "Sigh No More, Ladies" (Traditional).
 Piano and violin—Mr. Bradshaw Major and Miss Godson, two numbers from "Henry VIII. Dances" (German).
 Address—Mr. Allan Wilkie, "Shakespeare."
 Piano and violin—Mr. Bradshaw Major and Miss Godson, (a) "Barcarolle" ("The Merchant of Venice") (Rosse); (b) "Prelude No. 2" "The Merchant of Venice" (Rosse).
 Contralto solos—Miss Mollie Fenton, (a) "The Lawn is White as the Driven Snow" ("The Winter's Tale") (Johnson); (b) "Oh, Take Those Lips Away" ("Measure for Measure") (Wilson).
 Band—H.M. Coldstream Guards, "Midsummer Night's Dream" (Mendelssohn) (Columbia Record 02678).
 Tenor solos—Mr. Roy Hill, (a) "It was a Lover and his Lass" (Morley); (b) "Who Is Sylvia?" (Schubert).
 Chorus with orchestra—La Scala Chorus, "La Tempesta" (The Tempest) ("Otello") (Verdi), and "Fuoco di Gioia" (Fury of the Fire) (Columbia Record 02723). (These choruses are taken from the opera "Otello" (Verdi), an operatic version of Shakespeare's play, "Othello").
 Band—H.M. Coldstream Guards, "The Doges' March" ("The Merchant of Venice") (Rosse) (H.M.V. Record C862).
 Close down.

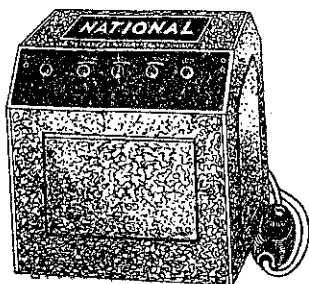
3YA, CHRISTCHURCH (306 METRES)—SUNDAY, FEBRUARY 10.

- 3 p.m.: Afternoon session—Selected studio items.
 4.30: Close down.
 5.30: Children's song service conducted by Uncle David.
 6.15: Hymn chimes.
 6.30: Relay of service from Oxford Terrace Baptist Church (Preacher, Rev. J. Robertson, M.A.; choirmaster, Mr. Vic. Peters; organist, Mr. Melville Lawry).
 7.45 (approx.): Orchestral—Royal Albert Hall Orchestra, "Pomp and Circumstance" (in A Minor) (Elgar) (H.M.V. Record D1102).
 7.49: Contralto solo—Miss Nellie Lowe, "Woe Unto Them" (Mendelssohn).
 7.53: Violin solo—Isolde Menges, "Air on G String" (Bach) (H.M.V. Record D1283).
 7.57: Baritone solo—Mr. A. G. Thompson, "Is Not His Word Like a Fire?" ("Elijah") (Mendelssohn).
 8.1: Choir and organ—"Through the Night of Doubt and Sorrow" (Dykes) (Zonophone Record 5110).
 8.5: Mezzo-soprano solo—Miss Maris Spiller, "Creation's Hymn" (Beethoven).
 8.9: Pianoforte solo—Alfred Cortot, "Rigoletto"—"Paraphrase de Concert" (Verdi-Liszt) (H.M.V. Record DB1105).
 8.17: Vocal duet—Dulcet Duo, "The Enchanted Hour" (Leoni).
 8.22: Orchestral—San Francisco Symphony Orchestra, "Coppelia Ballet" (Delibes) (H.M.V. Record D1272).
 8.26: Contralto solo—Miss Nellie Lowe, "Like as the Hart" (Ahlitsen).
 8.30: Violin, cello, and piano solo—Kreisler, Kreisler and Raucheisen, "Marche Miniature Viennoise" (Kreisler) (H.M.V. Record DA961).
 8.34: Baritone solo—Mr. A. G. Thompson, "It Is Enough" (from "Elijah"—Mendelssohn).
 8.38: Suite—Royal Opera Orchestra, "Peer Gynt Suite" (Grieg) (H.M.V. Records C1298-9): 1. Morning. 2. Death of Ase. 3. Anitra's Dance. 4. In the Hall of the Mountain King.

(Peer Gynt, the only son of poor peasants, is drawn by the poet as a character of morbidly developed fancy. In his youth he has many wild adventures—for instance, he stole the bride from a peasant's wedding and carried her up to the mountain peaks. Here he leaves her to roam with wild cowherd girls. He then enters the kingdom of the mountain king, whose daughter falls in love with him and dances to him. But he laughs at the dance and droll music, at which the outraged mountain folk try to kill him. He escapes and wanders in foreign lands, amongst others, Morocco, where he appears as a prophet. After many hardships he returns as an old man, suffering shipwreck on the way, to his home as poor as he left it. Here the sweetheart of his youth, Solveig, awaits him, faithful through all the years.)

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Week-all Stations-to Feb. 17

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- 8.54: Mezzo-soprano solos—Miss Mavis Spiller. (a) "Through all the Ages" (Coates); (b) "Our Little Home."
 8.58: Grand organ solos—Edwin H. Lemare. (a) "Aloha-Oe" (Farewell to Thee) (Liliuokalani); (b) "Chant de Bonheur" (Song of Happiness) (Lemare) (Zonophone Record EE93).
 9.6: Tenor solo—Signor Caruso, "Agnus Dei" (H.M.V. Record DB120).
 9.10: Violin solo—Jascha Heifetz. (a) "Rondo," (b) "Ave Maria" (H.M.V. Record DB1047).
 9.14: Tenor solo with choir, John McCormack, "Adeste Fideles" (H.M.V. Record DB984).
 9.18: Choir—Russian State Choir, "Storm on the Volga" (Pastshenko) (H.M.V. Record 1498).
 9.26: Military Band—National Military Band, "Christchurch Chimes" (arr. Hare) (Zonophone Record 5119).
 9.30: Close down.

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

- 5.30: Children's song service conducted by Big Brother Bill.
 6.30: Relay of service from Central Mission, Octagon Hall (Preacher, Rev. W. Walker; organist, Mr. C. A. Martin).
 7.45 (approx.): Gramophone recital.
 9.15: Close down.

Monday, February 11

1YA, AUCKLAND (333 METRES)—MONDAY, FEBRUARY 11.

SILENT DAY.

2YA, WELLINGTON (420 METRES)—MONDAY, FEBRUARY 11.

- 3.0 p.m.: Chimes of the G.P.O. Clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sports to hand.
 5.0: Close down.
 6.0: Children's session conducted by Uncle Jeff and Aunt Gwen.
 7.0: News session, market reports and sports results.
 7.40: Lecturette—Mr. H. C. South, "Books—Grave and Gay."
 8.0: Chimes of the G.P.O. Clock.
 8.1: Overture—Orchestra, "Peter Schmoll" (Weber).
 8.11: Soprano solo—Miss Lola Solomon, "Rosamunde" (Chaminade).
 8.15: Pianoforte solo—Miss Gladys Strong, "Polka De La Reine" (Raff).
 8.22: Baritone solos—Mr. John Prouse, (a) "Hear Me Ye Winds and Waves" (Handel), (b) "Snowy Breasted Pearl" (Robinson).
 8.29: Symphony—Orchestra, "Military Symphony" 1st. Movement (Haydn).
 8.37: Recital—Mr. Albert J. Harper, an excerpt from "Travels With a Donkey" (R. L. Stevenson).
 8.42: Suite—Orchestra, "Reminiscences of Grieg" (Arrgd. Godfrey).
 8.54: Contralto solo—Miss Evelyn Robinson, "Sometimes I Feel Like a Motherless Child" (Burleigh) (Negro Spiritual).
 8.58: Tenor solo—Mr. James Fordie, "Eleanore" (Coleridge-Taylor).
 9.2: Instrumental—Orchestra, Repeat number.
 9.10: Weather report.
 9.12: Soprano solos—Miss Lola Solomon, (a) "A Birthday" (Woodham), (b) "La Serenata" (Tosti).
 9.18: Violin solo—Fritz Kreisler, "From the Land of the Sky Blue Water" (Cadman) (H.M.V. Record DA45).
 9.22: Baritone solos—Mr. John Prouse, (a) "Absent, Yet Present" (Maude Valerie White), (b) "The Yeoman's Wedding" (Poniatowski).
 9.29: Ballet suite—Orchestra, "Ballet Suite" (Rameau-Motti); 1. Minuet, 2. Musette, 3. Tambourin.
 9.39: Humour—Mr. Albert J. Harper, "The Groom's Story" (Conan Doyle).
 9.45: Baritone and soprano duet—Apollo Granforte and Hilda Monti, (a) "Rivedrai Le Foreste Imbalsamate" (Once Again Shalt Thou Gaze Upon our Forests), (b) "Su Dunque" (Arise then) (from "Aida") (Verdi), (H.M.V. Record DB1153).
 9.53: Contralto solos—Miss Evelyn Robinson, (a) "Vale" (Kennedy Russell), (b) "Sunrise" (Burleigh).
 9.59: Tenor solos—Mr. James Fordie, (a) "I Heard You Go By" (Wood), (b) "Red Devon by the Sea" (Clarke).
 10.6: Musical comedy selection—Orchestra, "To-night's The Night" (Rubens).
 10.16: Close down.

3YA, CHRISTCHURCH (306 METRES)—MONDAY, FEBRUARY 11.

- 3 p.m. Afternoon session—Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session conducted by Sister Scatterjoy.

- 7.15: News session.
 7.30: Talk—Mr. Chas. Buckett, "Walking as an Exercise."
 8.0: Chimes.
 Programme by the Woolston Brass Band under the conductorship of Mr. R. J. Estall, and assisting artists.
 8.1: March—Band, "Brigade of the Guards" (Hawkins).
 Overture—Band, "Zauber Flute" (Mozart).
 8.13: Soprano solo—Miss Eileen Grennell, "Spring's Awakening" (Sanderson).
 8.17: Male choir—Don Cossacks Choir, "Tri Piesni" (Three Folk Songs) (arr. Dobrowsen) (Columbia Record 02712).
 8.21: Baritone solo—Mr. Robert W. Rofe, "The Blue Dragoons" (Kennedy Russell).
 8.25: Instrumental trio—Christchurch Broadcasting Trio, "Blue Danube Waltz" (Strauss).
 8.35: Legal points—Mr. J. J. Flewellyn, "Police Court Justice" (Will Evans).
 8.40: Cornet duet—Bandsmen Dunn and Annand, "Titlarks" (Hume).
 8.45: Contralto solo—Mrs. E. H. Davies, "Danny Boy" (Old Irish).
 8.49: Humorous song—Mr. Jock Lockhart, "It All Comes out of the Rates" (Weston, Lee).
 8.54: Selection—Band, "La Traviata" (Verdi).
 9.4: Weather report.
 9.5: Vocal duet—Layton and Johnstone, "Oh! Kay" Medley (Gershwin) (Columbia Record 02558).
 9.9: Soprano solos—Miss Eileen Grennell, (a) "Beyond the Dawn" (Sanderson), (b) "The Song is Ended" (Berlin).
 9.15: Instrumental trios—Christchurch Broadcasting Trio, (a) "Viennese March" (Kreisler), (b) "The Old Refrain" (Kreisler), (c) "Syncopation" (Kreisler).
 9.25: Baritone solos—Mr. Robert W. Rofe, (a) "My Old Shako" (Trotiere), (b) "Glorious Devon" (German).
 9.31: Song and cornet solo—Band (soloist, R. Ohlsen), (a) "Annie Laurie" (Rimmer), (b) "O Dry Those Tears" (Del Riego).
 9.41: Contralto solos—Mrs. E. H. Davies, (a) "Memories of Eventide" (Gibson), (b) "Loch Lomond and You" (Drummond).
 9.47: Table-turning, Mr. J. J. Flewellyn, "The Conjuror's Revenge" (Leacock).
 9.52: Humorous songs, Mr. Jock Lockhart, (a) "Osk Kosh" (Weston, Lee), (b) "You'll Remember Me."
 9.56: Chorus with orchestra, Light Opera Company, Gems from "The Girl Friend" (Rodgers) (H.M.V. Record C1399).
 10.0: Waltz—Band, "Casino Tanze" (Gung'l).
 March—Band, "Boulder City" (Ord Hume).
 Close down.

4YA, DUNEDIN (463 METRES)—MONDAY, FEBRUARY 11.

SILENT DAY.

Tuesday, February 12

1YA, AUCKLAND (333 METRES)—TUESDAY, FEBRUARY 12.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session conducted by Uncle George.
 7.15: News and market reports—Book review.
 8.0: Chimes.
 8.1: Overture—Orchestra, "Jolly Robbers" (Suppe).
 8.11: Baritone solo—Mr. Walter Brough, "Prologue, 'I Pagliacci'" (Leoncavallo).
 8.15: Grand organ solo—Edwin H. Lemare, "Aloha-Oe" (Farewell to Thee) (Liliuokalani) (Zonophone Record EE93).
 8.19: Contralto solo—Miss Madge Clague, "O Love, from Thy Power" ("Samson and Delilah") (Saint-Saens).
 8.23: Monologue—Miss Gladys Gammon, "The Last Token" (Eaton).
 8.28: Relay of orchestral entr'acte from Majestic Theatre Orchestra, under the conductorship of Mr. J. Whiteford Waugh.
 8.36: Tenor solos—Mr. Birrell O'Malley, (a) "Salut d'Amour" ("Faust"—Gounod); (b) "To a Miniature" (Brahe).
 8.44: Pianoforte solo—Mr. Cyril Towsey, "Rondo" (Field).
 8.48: Talk—Mr. A. B. Chappell, M.A., "The Maori: His Music."
 9.3: Weather report.
 9.5: Suite—Orchestra, "By the Blue Hawaiian Waters" (Ketelbey): (1) Hula Dance; (2) The Kanaka Lover Appears; (3) Song of the Hula Girl; (4) Dance of the Betrothal Ceremony.
 9.11: Baritone solo—Mr. W. Brough, (a) "Toreador's Song" ("Carmen"—Bizet); (b) "Invictus" (Huhn).
 9.19: Soprano solo with chorus—Margaret Sheridan, "Ancora in Passo" (There is one more step to climb) ("Madame Butterfly") (Puccini) (H.M.V. Record DB1084).

- 9.23: Recitals—Miss Gladys Gammon, (a) "The Old Sedan Chair" (Dobson); (b) "Old Pierrot" (Levey).
- 9.31: Novelty—Orchestra, "In a Persian Market" (Ketelbey).
(Synopsis: The camel-drivers gradually approach. The cries of beggars for "backsheesh" are heard in the distance. The beautiful princess enters, carried by her servants. (She is represented by a theme, given at first to clarinet and cello, then repeated by full orchestra.) She stays to watch the jugglers and snake-charmer. The Caliph now passes through the market and interrupts the entertainment. The beggars are heard again—the princess prepares to depart, and the caravan resumes its journey. The theme of princess and camel-drivers is heard faintly in the distance, and the market-place becomes deserted.)
- 9.37: Contralto solo—Miss Madge Clague, "When All Was Young" ("Faust"—Gounod).
- 9.41: Baritone and soprano with chorus and orchestra—Apollo Granforte, Hilda Monti, and La Scala chorus, "Rivedrai le Foreste Imbalsamate" (Once again shalt thou gaze on our forests), and "Su Dunque" (Arise, then) ("Aida"—Verdi) (H.M.V. Record DB1153).
- 9.49: Tenor solo—Mr. B. O'Malley, "La Donna e Mobile" ("Rigoletto"—Verdi).
- 9.53: Musical comedy selection—Orchestra, "Sunny" (Kern).
- 10.3: Close down.

2YA WELLINGTON (420 METRES)—TUESDAY, FEBRUARY 12.

- 3.0 p.m.: Chimes of the G.P.O. Clock.
- 3.1: Selected gramophone items.
- 4.30 and 4.55: Sports results to hand.
- 5.0: Close down.
- 6.0: Children's sessions conducted by Uncle Jim.
- 7.0: News session—market reports and sports results.
- 7.40: Lecture by a representative of the Agricultural Department "For the Man on the Land."
- 8.0: Chimes of the G.P.O. Clock.
- 8.1: Overture—Orchestra, "Caliph of Baghdad" (Boieldieu).
- 8.11: Mezzo-soprano solo—Mrs. W. Blacklock, "Down the Vale" (Motr).
- 8.15: Tenor solo—Mr. G. Austin Blackie, "Rosamund" (Forster).
- 8.19: Steel guitar duo—Messrs. Berthold and Bent, (a) "Kawahau" (Awai), (b) "So Blue" (De Sylva).
- 8.26: Comic songs—Mr. Len Ashton, (a) "The Fireman's Dream" (Rouse and Gausden), (b) "Oil! Oil! What a Bizziness" (Thurman).
- 8.33: Novelty (piano and vocal)—Two Boiled Owls, piano, (a) "Beautiful" (Shay), (b) "Jazzariatrix" (Mayerl); vocal, (a) "Red Lips, Kiss My Blues Away," (b) "Why Do I Always Remember" (Gunsky).
- 8.43: Suite—Orchestra, "Crown of India" (Elgar):
1. Dance of the Nautch Girls.
2. Minuet.
3. The Warrior's Dance.
4. Interlude.
5. March of the Mogul Emperors.
- 8.58: Weather report.
- 9.0: Mezzo-soprano solos—Mrs. W. Blacklock, (a) "Here in the Quiet Hills" (Carne), (b) "The Arrow and the Song" (Balfe).
- 9.7: Instrumental—Orchestra, Repeat number.
- 9.15: Comic song—Mr. Len Ashton, "Buying a Stamp" (Weston and Lee).
- 9.21: Steel guitar duo—Messrs. Berthold and Bent, (a) "Drowsy Waters" (Alan), (b) "Southern Blues" (Palakiko).
- 9.28: Tenor solos—Mr. G. Austin Blackie, (a) "Myrra" (from "Songs from the Turkish Hills") (Clutsam), (b) "An Answer" (Cohnreich).
- 9.35: Novelty—Orchestra, "Lightning Switch" (Alford).
- 9.43: Sketch—Two Boiled Owls, "A Day's Broadcasting" (Clapham and Dwyer).
- 9.50: Chorus and orchestra, Victor Arden, Phil Ohman and their orchestra, Selections from "Good News" (De Sylva) (H.M.V. Record EB28).
- 9.54: Musical comedy selection—Orchestra, "Sinbad" (Romberg).
- 10.4: Close down.

3YA, CHRISTCHURCH (306 METRES)—TUESDAY, FEBRUARY 12. SILENT DAY.

4YA, DUNEDIN (463 METRES)—TUESDAY, FEBRUARY 12.

- 8 p.m.: Town Hall chimes.
- 3.1: Relay of afternoon-tea music from the Rita.
- 4.35: Sports results to hand.
- 4.50: Close down.
- 6.0: Town Hall chimes.
- 6.1: Children's session conducted by Big Brother Bill.
- 7.30: Tourist talk by Mr. R. W. Marshall, of the Government Tourist Department.
- 8.0: Town Hall chimes.
- 8.1: Military Band selections—H.M. Grenadier Guards, (a) "Twist and Twirl" (Kottam); (b) "La Paloma" (Yradier) (Columbia Record 0987).
- 8.2: Bass solos—Mr. Norman G. Lennon, (a) "Trade Winds" (Keel); (b) "Mother Cary" (Keel).
- 8.16: Saxophone solo—Rudy Wiedoeft, "Serenade" (Drigo, arr. Wiedoeft) (Columbia Record 01180).
- 8.20: Soprano solo—Miss Vanda Duncan, "Chanson Florian" (Godard).
- 8.24: Recitals—Mr. Clarence Paine, (a) "The Power of the Press" (O. Henry); (b) "A Rubberneck Story" (O. Henry).

- 8.32: Patrol—H.M. Grenadier Guards Band, "Turkish March" (Columbia Record 4111).
- 8.36: Tenor solo—Mr. R. A. Mitchell, "Youth" (Allitsen).
- 8.40: Orchestral selection—London Theatre Orchestra, "Lilac Time" (Schubert-Clutsam) (Columbia Record 02699).
- 8.48: Contralto solo—Miss Mary Pratt, (a) "Annie Laurie"; (b) "Meeting of the Waters."
- 8.54: Male choir—Don Cossacks Choir, "Tri Piesni" (Three Folk Songs) (Columbia Record 02712).
- 8.58: Weather report.
- 9.0: Orchestral—Orchestra Symphonique de Paris, (a) "L'Arlesienne—Farandole," (b) "L'Arlesienne—Marche des Rois" (Bizet) (Columbia Record 01328).
- 9.7: Bass solo—Mr. Norman G. Lennon, "Harlequin" (Sanderson).
- 9.11: Cello solos—W. H. Squire, (a) "Le Cygne" (Saint-Saens), (b) "Berceuse de Jocelyn" (Godard) (Columbia Record 04179).
- 9.19: Soprano solos—Miss Vanda Duncan, (a) "I Know a Bank" (Shaw); (b) "Cradle Song" (Ford).
- 9.25: Recital—Mr. Clarence Paine, "The Pacific Coast" (Fox Smith).
- 9.30: Novelty duet—Leighton and Johnstone, "Without You, Sweetheart" (De Sylva) (Columbia Record 01208).
- Piano duet—Mering and Pollack, "High Hat" (Foxtrot) (Alter) (Columbia Record 01224).
- 9.37: Tenor solos—Mr. R. A. Mitchell, (a) "The Sweetest Flower that Blows" (Hawley); (b) "Obstination" (de Fontenailles).
- 9.44: Scottish comedian—Will Fyffe, "Sailing Up the Clyde" (Fyffe) (Columbia Record 02726).
- 9.48: Orchestral selection—Herman Finck's Orchestra, "Schubertiana" (arr. Finck) (Columbia Record 02721).
- 9.56: Contralto solo—Miss Mary Pratt, "Will He Come?" (Sullivan).
- 10.0: Choir—Don Cossacks Choir, "Monotonously Rings the Little Bell" (Russian Folk Song) (Columbia Record 9085).
- Waltz—Eddie Thomas's Collegians, "Moonlight on the Danube" (Gay) (Columbia Record 01135).
- 10.8: Close down.

Wednesday, February 13

1YA, AUCKLAND (333 METRES)—WEDNESDAY, FEBRUARY 13.

- 3 p.m.: Afternoon session—Selected studio items.
- 4.0: Literary selection by the announcer.
- 4.8: Further studio items.
- 4.25: Sports results to hand.
- 4.30: Close down.
- 6.0: Children's session conducted by Uncle Tom.
- 7.15: News and market reports.
- 7.45: Talk—Mr. Norman Kerr, "Physical Culture."
- 8.0: Chimes.
- Programme by Auckland Artillery Band and assisting artists.
- 8.1: March—Band, "Dreadnaught March" (Rimmer).
Selection—Band, "Ramona" (Wayne).
- 8.9: Vocal quartet—Clarion Quartet, "An Evening Pastorale" (Shaw).
- 8.13: Contralto solo—Miss Beryl Skith, "Quiet" (Sanderson).
- 8.17: Humour—Will Kings, "Bertram at the Rotary Dinner" (Merry) (H.M.V. Record C1340).
- 8.21: Selection—Band, "The Arcadians" (Monckton).
- 8.31: Vocal duet—Miss A. McGruer and Mr. J. Simpson, "Flirtation" ("Tonight's the Night") (Aubens).
- 8.35: Light orchestral—New Light Symphony Orchestra, "Just a Memory" (De Sylva) (H.M.V. Record BB18).
- 8.38: Male voices—The Revellers, "Mammy is Gone" (De Sylva) (H.M.V. Record EA384).
- 8.41: March—Band, "Stars and Stripes" (Souza).
Descriptive selection—Band, "Smithy in the Woods" (Bidgood).
- 8.50: Bass solos—Mr. Duncan Black, (a) "Nature's Voice" (Linnell), (b) "Grey Days" (Johnson).
- 8.56: Vocal quartet—Clarion Quartet, "Thinking of You" (Parks).
- 9.0: Weather report.
- 9.1: Overture—Band, "Poet and Peasant" (Suppe).
- 9.12: Tenor solos—Mr. Jas. Simpson, (a) "Dolorosa" (Phillips), (b) "An Autograph" (MacAndrews).
- 9.18: Violin solo—Kreislner, "Indian Love Call" ("Rose Marie") (Friml) (H.M.V. Record DA785).
- 9.22: Soprano solo—Miss Alma McGruer, "Prince Charming" (Lehmann).
- 9.26: Humour—John Henry and Blossom, "Joe Murgatroyd Says" (Henry) (H.M.V. Record B2120).
- 9.30: Male voices—The Revellers, "Dream River" (Brown) (H.M.V. Record EA384).
- 9.34: Violin and cinema organ—Elsie Southgate, "I Hear You Calling Me" (Marshall) (Zonophone Record 510).
- 9.38: Vocal duet—Miss B. Smith and Mr. D. Black, "Loch Lomond" (Moffat).
- 9.42: Comedian—Sir Harry Lauder, "The Pirate" (Lauder) (H.M.V. Record D1434).
- 9.46: Selection—Band, "Bohemian Girl" (Balfe).
March—Band, "Palmer House" (Hume).
- 9.57: Chorus and orchestra—Victor Arden, Phil Ohman, and their Orchestra, Selections from "Funny Face" (H.M.V. Record EB28).
- 10.1: Close down.

2YA WELLINGTON (420 METRES)—WEDNESDAY, FEBRUARY 13. SILENT DAY.

3YA, CHRISTCHURCH (306 METRES)—WEDNESDAY, FEBRUARY 13.

- 8.0 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session, conducted by Big Brother.
 7.15: News session.
 7.30: Addington stock market reports.
 8.0: Chimes.
 8.1: Overture—Columbia Symphony Orchestra, "Maritana" (Wallace) (Columbia record 02682).
 8.9: Soprano solo—Miss Hilda Hutt, "I Hear a Thrush at Eve" (Cadman).
 8.13: Pianoforte solo—Miss Bessie Pollard, "Mephisto Waltz" (Liszt).
 8.17: Vocal mixed quartette—Dulcet Quartet, "Reverie" (Robertson).
 8.21: Symphonic selection—Studio Orchestra, "Allegretto" (from "Fourth Symphony") (Dvorak).
 8.30: Tenor solo—Mr. T. G. Rogers, "When a Charmer" (Verdi).
 8.34: Early history—Rev. B. Dudley, "Serious Trouble over Noah's Ark" (MS).
 8.39: Contralto solo—Miss Nellie Lowe, "Like to the Damask Rose" (Elgar).
 8.43: Minuet and waltz—Studio orchestra, (a) "Minuet" (Karganoff); (b) "Tout Vienne Valse" (Strauss).
 8.56: Baritone solo Mr. A. G. Thompson, "Volga Boat Song" (Gaisberg).
 9.0: Weather report.
 9.2: Chorus and orchestra, Columbia Vocal Gem Chorus, "No, No, Nanette" (Harbach) (Columbia record 9072).
 9.10: Astronomical talk—Rev. B. Dudley, F.R.A.S., "Some Museum Meteorites" (MS).
 9.25: Overture—Studio Orchestra, "Light Cavalry" (Suppe).
 9.34: Soprano solo—Miss Hilda Hutt, "The Valley of Laughter" (Sanderson).
 9.38: Pianoforte solos—Miss Bessie Pollard, (a) "Prelude No. 17"; (b) "Troika" (Tchaikowsky).
 9.42: Tenor solo—Mr. T. G. Rogers, "The Sailor's Grave" (Sullivan).
 9.46: Saxophone solo—Rudy Wiedoeft, "Serenade" (Drigo, Arrgd. Wiedoeft) (Columbia record 01180).
 9.49: Vocal mixed quartette—Dulcet Quartet, "Break, Break, Break" (MacFarren).
 9.53: Contralto solo—Miss Nellie Lowe, "When the House is Asleep" (Haigh).
 9.57: Instrumental octette—J. H. Squire's Celeste Octet, "La Serenata" (Angel's Serenade) (Braga) (Columbia record 9116).
 10.1: Soprano and contralto duet—Dulcet Duo, "Arise, O Sun" (Day).
 Baritone solo—Mr. A. G. Thompson, "Father O'Flynn" (Stanford).
 10.6: Orchestral—Ketelbey's Concert Orchestra, "Sanctuary of the Heart" (Ketelbey) (Columbia record 02690).
 Close down.

4YA, DUNEDIN (463 METRES)—WEDNESDAY, FEBRUARY 13.

- 7.0 p.m.: Town Hall chimes.
 7.1: Gramophone recital of request records.
 7.40: News session.
 8.0: Town Hall chimes.
 8.1: Overture—H.M. Grenadier Guards Band, "Poet and Peasant" (Suppe) (Columbia record 9087).
 8.9: Bass solo—Mr. Neil Black, "Will O' The Wisp" (Cherr).
 8.13: Pianoforte solos—Mrs. Ernest Drake, (a) "Night in May" (Palmgren); (b) "Toccata" (Paradise).
 8.21: Recitals—Mr. C. Russell Smith, (a) "Coming Home" (Bingham); (b) "The Lady from the West" (Myers).
 8.28: Marimbaphone solo—Mr. Hugh Dalziel, "Get Out and Get Under the Moon" (Jerome).
 8.32: Mezzo-soprano solo—Miss Molly Vickers, "Coo" ("A Country Girl") (Monckton).
 8.36: Orchestral selection—Herman Finck's Orchestra, "Schubertiana" (Arrgd. Fincke) (Columbia record 02722).
 8.44: Tenor solos—Mr. J. Swan, (a) "Duna" (McGill); (b) "I Heard You Go By" (Woods).
 8.51: Piano-acordion solos—Mr. Ted Heaney, (a) "American Medley"; (b) "Drink to me only."
 8.57: Contralto solo—Miss Dorothy Skinner, "Sapphic Ode" (Brahms).
 9.0: Weather report.
 9.2: Instrumental with vocal chorus—(a) Debroy Somers' Band, "The Toy-Town Artillery" (Frederick); (b) Ipana Troubadours, "S Wonderful" (Gershwin).
 9.10: Bass solos—Mr. Neil Black, (a) "Beyond the Dawn" (Sanderson); (b) "Off to the Rio Grande" (Marks).
 9.17: Saxophone solo—Rudy Wiedoeft, "Sax-O-Phun" (Wiedoeft) (Columbia record 4037).
 Vocal duet—Dora Labette and Hubert Eisdell, "Seven O'Clock in the Morning" (Hood) (Columbia record D1470).
 Violin solo—Sascha Jacobsen, "Pale Moon" (Logan and Kreisler) (Columbia record 01148).
 9.27: Mezzo-soprano solos—Miss Molly Vickers, (a) "Wandering" (Schubert); (b) "Dedication" (Franz).
 9.33: Marimbaphone solo—Mr. H. Dalziel, "Black and White Rag" (Botsford).
 9.38: Recital—Mr. C. Russell Smith, "Roundabouts and Swings" (Chalmers).
 9.42: Contralto solos—Miss Dorothy Skinner, (a) "O Rest in the Lord" (Mendelssohn); (b) "My Task."
 9.49: Piano-acordion solo—Mr. Ted Heaney, one-step (selected).
 9.53: Tenor solo—Mr. J. Swan, "Linden-Lea" (Vaughan Williams).
 9.57: Chorus—Columbia Vocal Gem Chorus, "No, No, Nanette" (Youmans) (Columbia record 9072).
 Novelty foxtrot—Debroy Somers' Band, "Rag Doll" (Brown) (Columbia record 0124).
 10.3: Close down.

Thursday, February 14

1YA, AUCKLAND (333 METRES)—THURSDAY, FEBRUARY 14.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session, conducted by Peter Pan.
 7.15: News and market reports.
 7.45: Talk—Mr. Norman Kerr, "Physical Culture."
 8.1: Overture—Philadelphia Symphony Orchestra, "Rienzi Overture" (Wagner) (H.M.V. Records ED3/4).
 8.12: Bass solos—Mr. Duncan Black, (a) "Fat Little Feller" (Jordan); (b) "Yeomen of England" (German).
 8.20: Instrumental trio—Auckland Trio, "First Movement Trio in F" (Brahms).
 8.26: Soprano with chorus—Toti Dal Monte, "Lo Dice Ognun" ("Tis known to all) (Donizetti) (H.M.V. Record DB1162).
 8.33: Baritone solo—Mr. Frank Sutherland, "Time to Go" (Sanderson).
 8.37: Violin solo—Miss Ina Bosworth, "Aria" (Bach).
 8.40: Contralto with organ—Esther Coleman, "Ave Maria" (Gounod) (Zonophone Record 5125).
 8.44: Bass solo—Mr. D. Black, "Anchored" (Watson).
 8.48: Instrumental—Auckland Trio, "Dale Dances" (Wood).
 8.53: Baritone solos—Mr. F. Sutherland, (a) "Beating Up the Channel" (Sanderson); (b) "Keep On Keeping On" (Longstaffe).
 9.1: Weather forecast.
 9.3: Presentation of the dramatic story, "Galapagos," by the Auckland Dramatic Players under the direction of Mr. J. F. Montague. (The true story of the voyage of the ill-fated Norwegian barque "Alexander" and the experience which befell its captain and crew).
 10.0: Close down.

2YA WELLINGTON (420 METRES)—THURSDAY, FEBRUARY 14.

- 3.0 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Close down.
 6.0: Children's session conducted by Aunt Gwen.
 7.0: News session, market reports and sports results.
 7.40: Lecturette—Mr. Alfred Blaxall, "Overcoming Indigestion."
 8.0: Chimes of the G.P.O. clock.
 Studio concert by the Wellington Municipal Tramways Band under the conductorship of Mr. T. Goodall, and assisting artists.
 8.1: Overture—Band, "The King's Lieutenant" (Moore).
 8.11: Soprano solo—Mrs. R. S. Allwright, "Farewell to Summer" (Johnson).
 8.15: Baritone solo—Mr. Claude Moss, "Sometimes in Summer" (Sterndale Bennett).
 8.19: Chorus with orchestra—Light Opera Company, "Lady Luck," vocal gem (Hedley) (H.M.V. Record C1346).
 8.27: Humour—Mr. J. S. Webb, "The Play" ("The Sentimental Bloke") (Dennis).
 8.33: Contralto solo—Mrs. Phyllis Ramsey, "Ring, Bells, Ring" (Day).
 8.37: Hawaiian—Hilo Hawaiian Orchestra, "Hawaiian Nights" (Roberts) (H.M.V. Record EA310).
 8.41: Tenor solo—Mr. E. W. Robbins, "The Dearest Land of All" (Simpson).
 8.45: Selection—Band, "The Arcadians" (Douglas).
 Foxtrot—Band, "Baby's Wooden Soldiers" (Myers).
 9.1: Weather report.
 9.3: Soprano solos—Mr. R. S. Allwright, (a) "Loveliest of Trees" (Peck); (b) "The Cuckoo" (Lehmann).
 9.10: Baritone solo—Mr. Claude Moss, "Sir Roger" (Colman).
 9.14: Waltz—Band, "Summer Zephyrs" (White).
 9.20: Humour—Mr. J. S. Webb, "O'Toole and McSharry" (Spencer).
 9.27: Contralto solos—Mrs. Phyllis Ramsey, (a) "My Soul" (Carrie Jacobs-Bond); (b) "A Song of the Open" (La Forge).
 9.33: Suite—Band, "A Rustic Holiday" (Rimmer).
 Foxtrot—Band, "When Lights Are Low in Cairo" (Myers).
 9.43: Tenor solos—Mr. E. W. Robbins, (a) "Beloved, It is Morn" (Aylward); (b) "Sympathy" (Marshall).
 9.50: Chorus with orchestra—Light Opera Company, gems from "The Blue Mazurka" (Lehar) (H.M.V. Record EB11).
 9.54: Romance—Band, "Le Soir" (Gounod).
 March—Band, "The Flying Eagle" (Blackenburg).
 10.4: Close down.

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

- 2.30 p.m. (approx.): Relay from Christchurch Railway Station of opening speech of the electrification of Christchurch-Lyttelton railway line, interspersed with gramophone selections from the studio.
 3.30: Continuation of speeches relayed from Lyttelton end of Electric Railway.
 4.30: Close down.
 6.0: Children's session, conducted by Uncle Hal.
 7.15: News session.
 8.0: Chimes.
 8.1: Rebroadcast of 2YA, Wellington.

- 8.6: Studio presentation of the song cycle, "The Little Sunbonnet" (Her-
man Lohr), by the Melodious Four Quartet, with instrumental ac-
companiment by the Christchurch Broadcasting Trio.
Soprano solo—"The Little Print Bonnet."
Tenor and contralto duet—"Where the Violets Grow."
Bass solo—"Little Mollie Mary."
Vocal quartet—"A Lady Came to Our Town."
Tenor and quartet—"Somewhere Town."
Soprano and baritone duet—"The Rose and the Nightingale."
Contralto solo—"If I had a Dolly."
Quartet—"So Glad of Heart."
- 8.26: Orchestral selection—Royal Albert Hall Orchestra, "Prelude" ("Car-
men") (Bizet) (H.M.V. Record E461).
- 8.30: Recitals—Miss Winifred Smith, (a) "Marguerite" (Whittier); (b)
"Oh!" (MS).
- 8.35: Soprano solos—Miss Frances Hamerton, (a) "A Summer" (Martin
Shaw); (b) "Down by the Sally Gardens" (Martin Shaw).
- 8.40: Harpsichord solo—Ignaz Friedman, "Rondo Alla Turca" (Mozart)
(Columbia Record 03612).
- 8.44: Tenor solo—Mr. Russell Sumner, "Ave Maria" (Kahn).
- 8.48: Orchestral—Orchestra Symphonique de Paris, (a) "L'Arlesienne—
Pastorale, L'Etang de Vaccares"; (b) "L'Arlesienne—Choeurs—
Suivant la Pastorale" (Bizet) (Columbia Record 01325).
- 8.56: Weather report.
- 9.2: Orchestral—Orchestra Symphonique de Paris, "L'Arlesienne—Prelude—
Overture, Act 1" (Bizet) (Columbia Record 01324).
- 9.10: Contralto solos—Miss Belle Renaut (a) "Since I Have Loved
Thee" (Noel Johnson); (b) "Love in the Meadows" (Johnson).
- 9.17: Orchestral—Orchestra Symphonique de Paris, "L'Arlesienne—Ada-
gietto" (Bizet) (Columbia Record 01327).
- 9.21: Bass solo—Mr. T. D. Williams, "Speed the Plough" (Easthope-Martin).
- 9.25: Instrumental trio—Christchurch Broadcasting Trio, "Andante and
Turkish Rondo" (Haydn).
- 9.35: Tenor solo—Mr. Russell Sumner, "The Plague of Love" (Arne).
- 9.39: Orchestral—Orchestra Symphonique de Paris, "L'Arlesienne—Le Caril-
lon" (Bizet) (Columbia Record 01327).
- 9.43: Soprano solo—Miss Francis Hamerton, "The West Wind" (Stewart).
- 9.47: Touches of life—Miss Winifred Smith, (a) "The Chimney Seat" (Han-
nequin); (b) "Cupid's Mistake" (Hannequin).
- 9.52: Bass solo—Mr. T. D. Williams, "A Soldier's Toast" (Dix).
- 9.56: Orchestral—Orchestra Symphonique de Paris, (a) "L'Arlesienne—
Fandole" (b) "L'Arlesienne—March des Rois" (Bizet) (Colum-
bia Record 01328).
- 10.4: Close down.

4YA, DUNEDIN (463 METRES)—THURSDAY, FEBRUARY 14. SILENT DAY.

Friday, February 15

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

- 3.0 p.m.: Afternoon session—Selected studio items.
- 4.0: Literary selection by the Announcer.
- 4.8: Studio items.
- 4.25: Sports results to hand.
- 4.30: Close down.
- 6.0: Children's session conducted by Nod and Aunt Jean.
- 7.15: News and market reports.
- 8.0: Chimes.
- 8.1: Overture—Orchestra, "The Rape in the Seraglio" (Mozart).
- 8.11: Vocal quartet—Olympians, "The Sea Hath Its Pearls" (Pinsuti).
- 8.15: Violin solo—Erica Moriui, "Romanza Andaluza" (Sarasate), (H.M.V.
Record D1445).
- 8.19: Tenor solo—Mr. Lambert Harvey, "She Is Far From the Land"
(Lambert).
- 8.23: Recitals—Miss Maisie Carte-Lloyd, (a) "The Ballad of Splendid Sil-
ence," (b) "In School Days."
- 8.32: Soprano solo—Miss Dorothy Youd, "Agnus Dei" (Bizet).
- 8.36: Ballet Suite—Orchestra, "Coppelia Ballet Suite" (Delibes):
1. Slavonic Theme, with variations.
2. Festival dance and waltz of the hours.
3. Nocturne.
4. Automaton music and waltz.
- 8.50: Baritone solo—Mr. Geoffrey Colledge, "From Oberon in Fairyland"
(Slater).
- 8.54: Grand organ and cornet—Arnold Greir, "Softly Awakes My Heart"
("Samson and Delilah") (Saint-Saens), (Zonophone Record
A309).
- 8.58: Contralto solo—Miss Martha Williamson, "Thank God for a Garden"
(Del Riego).
- 9.2: Weather report.
- 9.4: Piano with orchestra—Alfred Cortot, "Variations Symphonique" (Poco
allegro—Allegretto quasi andante—Molto piu lente) (Caesar
Frank) (H.M.V. Record DB1069-70).
- 9.19: Tenor solo—Mr. Lambert Harvey, "Macushla" (Macmurrrough).
- 9.23: Recital—Miss Maisie Carte-Lloyd, "Ring Out, Wild Bells."
- 9.28: Soprano solo—Miss D. Youd, "A Spirit Flower" (Tipton).
- 9.32: Selection—Orchestra, "Serenade" (Widor, arrgd. Bellingham).
- 9.38: Baritone solo—Mr. G. Colledge, "Arise, O Sun" (Day).

- 9.42: Contralto solos—Miss M. Williamson, (a) "I Am Longing for the
Spring" (Morris), (b) "Ships That Pass in the Night" (Sander-
son).
- 9.48: Musical comedy selection—Orchestra, "Lilac Time" Pt. 2 (Gershwin).
- 9.58: Vocal quartet—Olympians, "Alouette" (Melvin).
- 10.2: Close down.

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

- 3.0 p.m.: Chimes of the G.P.O. Clock.
- 3.1 Selected gramophone items.
- 4.30 and 4.55: Sports results to hand.
- 5.0: Close down.
- 6.0: Children's session conducted by Big Brother Jack.
- 7.0: News session—market reports and sports results.
- 7.40: Lecturette—Mr. D. McKenzie, "The Laws of Cricket."
- 8.0: Chimes of the G.P.O. Clock.
- 8.1: Overture—Orchestra, "Fingal's Cave" (Mendelssohn).
- 8.11: Soprano solo—Mrs. Ellison Porter, "I Wish I Had Someone to Live
For" ("Carmen") (Bizet).
- 8.15: Quartet with orchestra, Galli-Curci, Gigli, Homer and De Luca, "Bella
Figlia Dell 'Amore" (Fairnest Daughter of the Graces") ("Rigi-
letto") (Verdi) (H.M.V. record DQ102).
- 8.19: Bass solo—Mr. McAvoy, "O Dear Old London" (Maxwell).
- 8.28: Suite—Orchestra, "Pelleas et Melisande" Suite 2 (Sibelius): 1. Meli-
sande at the Spinning Wheel. 2. Entr'acte. 3. Prelude. 4. Death
of Melisande.
- 8.34: Tenor solo—Mr. Edwin Dennis, "Celeste Aida" ("Aida") (Verdi).
- 8.38: Sextet with orchestra—Galli-Curci, Homer Gigli De Luca, Pinza and
Bada, "Chi Mi Frena?" (What restrains me) ("Lucia di Lammer-
more") (Donizetti) (H.M.V. record DQ102).
- 8.42: Mrs. Albert Russell "Just Her Way" (Aitken), "Lovely Spring" (Coculu).
- 8.49: Contralto solo—Miss Madge Freeman, "My Partner" ("A Country
Girl") (Monckton).
- 8.58: Instrumental—Orchestra, repeat number.
- 9.1: Weather forecast.
- 9.3: Duet—Miss Madge Freeman and Mr. Edwin Dennis, "Two Chicks" (from
"A Country Girl") (Monckton).
- 9.7: Soprano solo—Mrs. Ellison Porter, "In Love" (from "A Country Girl")
(Monckton).
- 9.11: Saxophone solo—Rudy Wiedoeft, "Sax-O-Phun" (Wiedoeft) (Columbia
record 4037).
- 9.15: Bass solo—Mr. McAvoy, "Father O'Flynn" (Stanford).
- 9.19: Operatic selection—Orchestra, "Madame Butterfly" (Puccini).
- 9.33: "Mending Nets for Father" (Margaret Cooper), "A Birthday" (Cowen).
- 9.36: Chorus with orchestra, Light Opera Company, gems from "Rose Marie"
(Friml) (H.M.V. record C1205).
- 9.40: Tenor solo—Mr. Edwin Dennis, "Sweetheart Land" (Huerter).
- 9.44: Hawaiian guitar duet—"Hawaiian Hotel" (Nainas) (Regal record
G7667).
- 9.48: Contralto solo—Miss Madge Freeman, "Pansy Flower" (Spier).
- 9.52: Quartette—Philharmonic Quartet, "Aloha-oe" (Arrgd. Sawyer).
- 9.56: Ballet music—Orchestra, "Carmen" ballet music (Bizet).
- 10.6: Close down.

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

- 3.0 p.m.: Afternoon session—Selected studio items.
- 4.25: Sports results.
- 4.30: Close down.
- 6.0: Children's session conducted by "Mr. Storeyman."
- 7.15: News session.
- 8.0: Chimes.
- 8.1: Rebroadcast of 2YA, Wellington (Overture, "Fingal's Cave" (Mendels-
sohn).
- 8.11: Vocal quartet—Valencia Quartet, "Softly Falls the Shades of Evening"
(Hatton).
Soprano solo—Miss Renetta Rings, "I Dreamt That I Dwelt in Marble
Halls" ("The Bohemian Girl") (Balfe).
- 8.19: 'Cello solo—Mr. Harold Beck, "Songs My Mother Taught Me" (Dvorak).
- 8.23: Tenor solo—Mr. W. Bradshaw, "Alice Where Art Thou" (Ascher).
- 8.27: Instrumental and variety turn—Mr. Leslie Croft will entertain you
a potpourri of various types (MS).
- 8.35: Soprano and contralto duet—Valencia Duo, "Silent Night" (Glover).
- 8.39: Instrumental trios—Christchurch Broadcasting Trio (a) "Rondo"
(Pleyell), (b) "Scherzo" (from "D Minor Trio") (Schumann).
- 8.47: Contralto solo—Miss Mary Taylor, "The Hills of Donegal" (Sanderson).
- 8.52: Wurlitzer organ solos—Milton Charles, (a) "From the Land of the Sky
Blue Water" (Cadman), (b) "At Dawning" (Cadman) (Columbia
Record 01161).
- 8.56: Humour—Mr. George Titchener, "Moments of Mirth" (MS).
- 9.1: Weather report.
- 9.2: Bass solo—Mr. F. A. Millar, "The King's Highway" (Molloy).
- 9.6: March—Royal Italian Band, "Inno Di Garibaldi" (Garibaldi's Hymn")
(Olivieri) (Columbia Record 01182).
- 9.10: Vocal quartet—Valencia Quartet, "In This Hour of Softened Splen-
dour" (Pinsuti).
- 9.14: 'Cello solo—Mr. Harold Beck, "Russian Dance" (TrdL).
- 9.18: Duets at piano with ukulele—Happy Duo in the popular vocal duets.
- 9.22: Soprano solo—Miss Renetta Rings, "Birds of Love Divine" (Haydn
Wood).

- 9.26: Instrumental and variety turn—Mr. Leslie Croft will entertain you in various forms (MS).
 9.33: Tenor and bass duet—Valencia Duo, "Excelsior" (Balfe).
 9.37: Instrumental trios—Christchurch Broadcasting Trio, (a) "Serenade" (Mozart), (b) "Slow Waltz" (Carse), (c) "Moments Musical" (Schubert).
 9.47: Tenor solo—Mr. W. Bradshaw, "Mary of Argyle" (Nelson).
 9.51: Humour—Mr. Geo. Titchener, "Melting Moments of Mirth."
 9.57: Contralto solos—Miss Mary Taylor, (a) "Hush-a-Bye Birdie" (Old Scottish), (b) "Meadowsweet" (Brahe).
 10.2: Bass solo—Mr. F. A. Millar, "In Cellar Cool" (Old German).
 10.6: Duets at piano with ukulele, Happy Duo, in bright and joyful duets.
 10.11: Instrumental with vocal chorus—(a) Ipana Troubadours, "'S Wonderful" (Foxtrot) (Gershwin), (b) Debroy Somers' Band, "The Toy-Town Artillery" (Foxtrot) (Frederick) (Columbia Record 01306).
 Close down.

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

- 3.0 p.m.: Town Hall chimes.
 3.1: Selected gramophone items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Town Hall chimes.
 Children's session conducted by Aunt Sheila and Big Brother Bill.
 7.15: News session.
 7.30: Lecture—"Book Review," Mr. H. Greenwood of the Dunedin Athenaeum.
 8.0: Town Hall chimes.
 8.1: Orchestral—Orchestre Symphonique de Paris, (a) "L'Arlesienne Pastorale L'Etang de Vaccares"; (b) "L'Arlesienne Suivant la Pastorale Choeurs" (Bizet) (Columbia Record 01325).
 8.9: Baritone solo—Mr. F. M. Tuohy, "Maori Lullaby" (Luttridge).
 8.13: Violin solo—Miss Eva Judd, "Meditation" (Gounod).
 8.17: Recital—Miss Joyce Hould, "Hero of Commune" (Browning).
 8.23: Soprano solo—Miss Mae Matheson, "Open Thy Blue Eyes" (Massenet).
 8.27: Trios—4YA Broadcasting Trio, (a) "Allegretto From Trio in G Major" (Mozart), (b) "Second Valse" (Godard).
 8.35: Tenor solo—Mr. H. A. Johnston, "Dolorosa" (Phillips).
 8.39: Pianoforte solo—Mrs. Ernest Drake, "Country Gardens" (Grainger).
 8.44: Mezzo-soprano solo—Miss Mollie Andrews, "Violet" (Mallinson).
 8.47: Orchestral—Orchestre Symphonique de Paris, "L'Arlesienne Prelude" (Bizet) (Columbia Record 01324).
 8.55: Weather report.
 8.57: Song cycle, "Wind Flowers" (Somervell), presented by 4YA Harmonists
 Soprano: Miss Mae Matheson.
 Mezzo-soprano: Miss Mollie Andrews.
 Tenor: Mr. H. A. Johnston.
 Baritone: Mr. F. M. Tuohy.
 9.15: Violin solos—Miss Eva Judd, (a) "Lochaber" (Murdoch), (b) "Canzone Amatoria" (Nevin).
 9.18: Baritone solo—Mr. F. M. Tuohy, "Girl of My Dreams."
 9.22: Orchestral—Orchestre Symphonique de Paris, "L'Arlesienne La Cuisine de Castelet" (Bizet) (Columbia Record 01326).
 9.26: Recital—Miss Joyce Hould, Scene from "Twelfth Night" (Shakespeare).
 9.31: 'Cello solos—Mr. P. J. Palmer, (a) "Valse Apache" (Van Biene), (b) "Danse Orientale" (Squire).
 9.38: Orchestral—Orchestre Symphonique de Paris, "L'Arlesienne Minuetto" (Bizet) (Columbia Record 01327).
 9.42: Mezzo-soprano solo—Miss Mollie Andrews, "Goodnight Pretty Stars" (Johnson).
 9.46: Trio—4YA Broadcasting Trio, "Entr'acte Valse" (Hellmesbergen).
 9.50: Soprano solo—Miss Mae Matheson, "June is in My Heart" (Vaughan).
 9.54: Orchestral—Columbia Symphony Orchestra, Selection from "Faust" (Gounod), (Columbia Record 02708).
 10.2: Close down.

Saturday, February 16

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

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Studio items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session conducted by Cinderella.
 7.15: News and market reports—Sports results.
 8.0: Chimes.
 8.1: Overture—H.M. Coldstream Guards, "Light Cavalry" (Suppe) (H.M.V. Record C1335).
 8.5: Contralto solo—Miss Hilda Stansfield, "Rose in the Bud" (Forster).
 8.8: Instrumental trio—Auckland Trio, "Variations" (Tchaikowsky).
 8.16: Baritone solo—Lawrence Tibbett, "Believe Me If All Those Endearing Young Charms" (Moore) (H.M.V. Record DA886).
 Cinema organ solo—Chas. W. Saxby, "Sing Me to Sleep with a Twilight Song" (Gilbert)—(Zonophone Record 5123).

- 8.23: Humour—Mr. F. W. Barker, "After the Ball," Pt. 1 (Spurr).
 8.31: Hawaiian orchestra—Ingall's Hawaiian Orchestra, (a) "Aloha Land" (Herger), (b) "Tell Me" (MS.).
 8.39: Baritone solos—John Brownlee, (a) "A Word, Allow Me," (b) "A Song of Tender Memories" ("I Pagliacci"—Leoncavallo) (H.M.V. Record D1385).
 8.47: 'Cello solo—Miss Mollie Wright, "Berceuse" (Jarnfeldt).
 8.52: Contralto solos—Miss Hilda Stansfield, (a) "Salaam" (Laing); (b) "Before the Dawn."
 8.58: Weather report.
 9.1: Hawaiian orchestra—Ingall's Hawaiian Orchestra, (a) "Hilo Waltz" (Ingall), (b) "Pua Carnation" (Awai).
 9.9: Tenor with orchestra—John MacCormack, "Somewhere a Voice is Calling" (Tate) (H.M.V. Record DA914).
 9.13: Instrumental trio—Auckland Trio, "Marriage of Figaro" (Mozart).
 9.21: Humour—Mr. F. W. Barker, "After the Ball," Pt. 2 (Spurr).
 9.27: Hawaiian orchestra—Ingall's Hawaiian Orchestra, (a) "Hilo March" (Liliukulani), (b) "Lullaby Land" (Prival).
 9.33: Programme of dance music.
 11.0: Close down.

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

- 3.0 p.m.: Chimes of the G.P.O. Clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Close down.
 6.0: Children's session, conducted by Uncle Toby and Aunt Gwen.
 7.0: News session, market reports and sports results.
 8.0: Chimes of the G.P.O. Clock.
 8.1: Overture—Orchestra, "Raymond Overture" (Thomas).
 8.11: Vocal quartette—Melodie Four, "Jeannine, I Dream of Lilac Time" (Donaldson).
 8.14: Piano-acordion solo, Guido Deiro, "Toselli's Serenade" (Arrgd. Deiro) (Columbia record 01168).
 8.17: Bass solo—Mr. W. W. Marshall, "William Dhoan" No. 1 (Dhoan—traditional Manx Air) (By request).
 8.21: Novelty—Orchestra, "Carnival of the Animals" (Saint-Saens).
 8.39: Novelty—"Vermont"—Bird and Animal Imitations.
 8.43: Vocal with steel guitar and ukulele—Queenie and David Kaili, "Rose of Honolulu" (Armstrong) (Parlophone record A2439).
 8.47: Humour—Mr. Jack Wilkinson, "Buying a House" (Darley).
 8.53: Tenor solo—Mr. Sam Duncan, "Bonnie Mary of Argyle" (Nelson).
 8.57: Instrumental—Orchestra, repeat number.
 9.5: Weather report.
 9.7: Baritone solo—Mr. R. S. Allwright, "Wimmen, O Wimmen" (Fisher).
 9.11: Banjo solo—Len Fillis, "Uncanny Banjo" (Fillis and Bright) (Columbia record 0990).
 9.15: Vocal duet—Messrs. Sam Duncan and W. W. Marshall, "Larboard Watch" (Williams).
 9.19: Novelty—Orchestra, "Whistle for Me" (Fane).
 9.23: Humour—Mr. Jack Wilkinson, "Matilda" (Weston and Lee).
 9.29: Novelty—"Vermont"—Bird and Animal Imitations.
 9.33: Musical comedy selection—Orchestra, "The Chocolate Soldier" (Strauss).
 9.43: Tenor solo—Mr. Frank Bryant, "There's a Song Down Every Roadway" (Haydn Wood).
 9.47: Quartette—Melodie Four "The Harvest of the Sea" (Manx Fishermen's evening hymn).
 9.51: Instrumental—Orchestra, dance novelties.
 10.1: Dance programme.
 11.0: Close down.

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

- 3 p.m.: Afternoon session—Selected gramophone items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session conducted by Chuckle and Aunt Pat.
 7.15: News session.
 8.0: Chimes.
 Rebroadcast of 2YA, Wellington.
 10.0: Dance music until 11 p.m.
 11.0: Close down.

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

- 7.15 p.m.: News session.
 8.0: Town Hall chimes.
 8.1: Relay of orchestral music from Octagon Theatre Orchestra under the direction of Monsieur Henri de Rose (Mus. Bac.).
 8.11: Popular songs—Miss Thelma Blackman, (a) "Little Log Cabin of Dreams" (Hanley); (b) "Was it a Dream?" (Coslaw).
 8.18: Sketch—Miss Sheila Nelson and Mr. J. B. McConnell.
 8.28: Piano-acordion solo—Guido Diero, "Drigo's Serenade" (arr. Deiro) (Columbia Record 01168).
 8.32: Humorous Scottish songs—Mr. J. A. Patterson, (a) "The Engineer" (Fyffe), (b) "We Came Out Together" (Fyffe).
 8.40: Relay of orchestral music from Octagon Theatre.
 8.50: Popular song—Miss Thelma Blackman, "That Grey-headed Mother of Mine" (Gibbes).
 8.54: Hawaiian guitar duets—(a) "Aloha Land" (Herzer); (b) "Hawaiian Hotel" (Nainas) (Regal Record G7667).

- 9.2: Weather report.
 9.4: Sketch—Miss Sheila Neilson and Mr. J. B. McConnell.
 9.14: Instrumental—Paul Whiteman's Orchestra, (a) "There's Something about a Rose" (Kahn) (Columbia Record 01189).
 Instrumental—Paul Whiteman's Orchestra, "Gypsy" (Gilbert) (Columbia Record 07505).
 9.22: Humorous Scottish song—Mr. J. A. Paterson, "Sandy's Holiday" (Fyffe).
 9.27: Tenor with orchestra—Chas. Hackett, "The World is Waiting for the Sunrise" (Lockhart) (Columbia Record 03596).
 9.30: Columbia dance programme till 11 p.m.
 Foxtrot with vocal chorus—Debroy Somers' Band, "The Toy-Town Artillery" (Frederick) (Columbia Record 01306).
 Waltz—Eddie Thomas's Collegians, "Till We Meet Again" (Whiting) (Columbia Record 02553).
 Foxtrot with vocal chorus—Paul Whiteman's Orchestra, "Constantinople" (Carlton) (Columbia Record 07002).
 9.42: Soprano and male quartet—Norah Blaney and Ramblers, "Sweet Suzanne" (Leslie) (Columbia Record 01170).
 9.45: Selection—Debroy Somers's Band, "Good News" (De Sylva) (Columbia Record 02720).
 Foxtrot with vocal chorus—Paul Whiteman's Orchestra, "Last Night I Dreamed You Kissed Me" (Kahn) (Columbia 07002).
 9.56: Tenor with orchestra—Alfred O'Shea, "Just a Little Love, a Little Kiss" (Ross) (Columbia Record 07505).
 Waltz—Rio Marimba Serenaders, "Dolores Waltz" (Waldtenfel) (Columbia G20344).
 Novelty foxtrot—Debroy Somers's Band, "Rag Doll" (Brown) (Columbia Record 01293).
 10.14: Foxtrot (with incidental singing)—Stellar Dance Band, "Just Imagine" (De Sylva) (Regal Record G20338).
 Foxtrot with vocal chorus—Denza Dance Band, "Varsity Drag" (De Sylva) (Columbia Record 01151).
 Foxtrot with vocal chorus—Paul Whiteman's Orchestra, "Get Out and Get Under the Moon" (Shay) (Columbia Record 07001).
 10.24: Tenor solo—Alfred O'Shea, "Then You'll Remember Me" (The Bohemian Girl) (Baife) (Columbia Record 03613).
 10.28: Wurlitzer organ solo—Milton Charles, "Cheerie-Beerie-Be" (Wayne) (Columbia Record 0914).
 Waltz—Ben Selvin's Orchestra, "Ramona" (Wayne) (Columbia Record 01137).
 Foxtrot with vocal chorus—South Sea Islanders, "Hanalei Bay" (Alohihea) (Columbia Record 0737).
 10.33: Spoken novelty—Flotsam and Jetsam, "The Business Man's Love Song" (Hilliam) (Columbia Record 0995).
 10.42: Vocal duet—Gus Van and Joe Schenck, "Skatadin-Dee" (Tobais) (Regal Record G20336).
 Foxtrot with vocal chorus—Paul Whiteman's Orchestra, "Evening Star" (Turk) (Columbia Record 07001).
 Waltz—Eddie Thomas's Collegians, "The Missouri Waltz" (Logan) (Columbia Record 02553).
 Foxtrot—Ben Selvin's Orchestra, "In My Bouquet of Memories" (Akst) (Columbia 01137).
 10.50: Whispering solo with violin—Jack Lumsdaine, "Like a Bird that's on the Wing" (Tobais) (Columbia Record 01185).
 10.58: Foxtrot with incidental singing—Stellar Dance Band, "Dream House" (Cowan) (Regal Record G20338).
 11.2: Close down.

Sunday, February 17

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

- 3.0 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.7: Selected studio items.
 4.30: Close down.
 6.0: Children's session, conducted by Uncle Leo.
 6.55: Relay of service from Church of Christ—
 Preached: Mr. Ernest Aldridge.
 Organist: Mr. Ivan Lambert.
 8.30: Orchestral—Royal Philharmonic Orchestra, "Symphony in E Flat No. 39" (Mozart) (Columbia records 02715-6-7).
 8.45: Contralto solos—Mr. B. Jellard, (a) "Soul of Mine" (Barns); (b) "My Gentle Child" (Del Riego).
 8.53: Pianoforte solo—Ignaz Friedman, "Mazurka" (Chopin) (Columbia record 03619).
 8.57: Bass solo—Mr. A. Colledge, "Now Heaven in Fullest Glory" (Haydn).
 9.1: Cello solo—Felix Salmond, "Kol Nidrei" (Bruch) (Columbia record 04190).
 9.9: Contralto solo—Mrs. B. Jellard, "Harvester's Night Song" (Power).
 9.13: Organ solos—Quentin Maclean, (a) "In a Persian Market" (Ketelbey); (b) "In a Chinese Temple Garden" (Ketelbey) (Columbia record 01921).
 9.20: Bass solos—Mr. A. Colledge, (a) "The Lord is My Light" (Liddle); (b) "Light in Darkness" (Cowen).
 9.27: Orchestral—New Queen's Hall Light Orchestra, selection from "I Pagliacci" (Leoncavallo) (Columbia record 02714).
 9.34: Close down.

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

- 3 p.m.: Afternoon session—Selected studio items.
 4.30: Close down.
 6.0: Children's Sunday service conducted by Uncle George.
 7.0: Relay of service from Vivian Street Church of Christ. Preacher: Paster W. G. Carpenter. Organist: Miss Iris Mason. Choir-master: Mr. W. J. Mason.
 8.15 (approx.): Studio concert.
 Orchestral—Philadelphia Symphony Orchestra, "Scheherazade Symphonic Suite" 3rd. Movement (The Young Prince and the Young Princess) (Rimsky-Korsakov), (H.M.V. Records D1438/9).
 Soprano solo—Miss Myra Sawyer, "Sweet Spirit, Hear My Prayer" (Wallace).
 Violin and piano—Erici Morini and N. Schwalb, "Adagio Molto Espressivo" and "Scherzo" from "Sonata in F Major" (Beethoven) (H.M.V. Record EC2).
 Bass solo—Mr. W. Boardman, "Love Leads to Battle" (Buononcini).
 Instrumental—String Sextette, (a) "Chant de Berger" (Galos); (b) "Romance" (Rubinstein) (Zonophone Record 5154).
 Contralto solo—Mrs. T. Tracey, "Ave Maria" (Luzzi).
 Orchestral—Grand Symphony Orchestra, "Intermezzo—Cavalleria Rusticana" (Mascagni), (Parlophone Record A4033).
 Lyric tenor with orchestra—Nino Ederle, (a) "Spirito Gentil" ("La Favorita") (Donizetti); (b) "Ecco Ridente" ("Barber of Seville") (Rossini) (Parlophone Record A4039).
 Overture—National Symphony Orchestra, "Stradella" (Flotow) (Zonophone Record EE116).
 Duet—Miss Myra Sawyer and Mr. A. Boardman, "Still as the Night" (Goetz).
 Pianoforte solos—Ignaz Jan Paderewski, (a) "Nocturne in F Sharp Major" (Chopin); (b) "La Campanella" (Paganini-Liszt) (H.M.V. Record DB1167).
 Soprano solo—Miss Myra Sawyer, "An Indian Squaw's Song" (Morgan).
 Band selection—Band of H.M. Coldstream Guards, "Suite Francaise" (Foulds) (H.M.V. Record B2751/2).
 Contralto solos—Mrs. T. Tracey, (a) "Love's Night" (Temple); (b) "Recompense" (Sanderson).
 Instrumental—Victor Olof Sextet, (a) "Serenata" (Moszkowski); (b) "Hungarian Dance No. 5" (Brahms), (H.M.V. Record B2451).
 Bass solo—Mr. W. Boardman, "The Trumpeter" (Dix).
 March—International Band, "Dress Parade" (Arranged Enriquez) (H.M.V. Record EA424).
 Close down.

3YA, CHRISTCHURCH (306 METRES)—SUNDAY, FEBRUARY 17.

- 3.0 p.m.: Afternoon session—Selected gramophone items.
 4.30: Close down.
 5.30: Children's song service, conducted by Uncle David.
 6.15: Chimes of hymn melodies.
 6.30: Relay of service from St. Saviour's Church of England, Sydenham—
 Preacher: Canon C. G. Mutter.
 Organist: Mr. C. Hoskin.
 7.45 (approx.): Studio programme.
 Overture—Berlin State Opera House Orchestra, "Tannhauser" (Wagner) (Parlophone record A4036-7).
 8.0: Soprano solo—Miss Alma Shuker, "Gloria" (Buzzi-Pecora).
 8.5: Baritone solo—Mr. Robt. Samson, "Prologue—I Pagliacci" (Leoncavallo).



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- 8.9: Violin solos—Edith Lorand, (a) "The Old Tower of St. Stephens" (Brandl-Freisler); (b) "Minuet in G" (Beethoven); (c) "Schon Rosmarin" (Kreisler) (Parlophone record B10549).
- 8.17: Mezzo-soprano solo—Mrs. Bessie Steward, "Oh! Wondrous Mystery of Love" (List—transposed by H. M. Lund).
- 8.21: Instrumental quintette—Parlophone Instrumental Quintet, "Silent Night, Holy Night" (Parlophone record A2581).
- 8.25: Soprano solos—Miss Alma Shukea, (a) "Now Sleeps the Crimson Petal" (Quilter); (b) "A Little Coon's Prayer" (Hope).
- 8.31: Trio with chorus and orchestra—Stracciari, Appoloni and Ticozzi—"Toreador's Song" ("Carmen") (Bizet) (Columbia record 04173).
- 8.35: Orchestral—San Francisco Symphony Orchestra, "Funeral March of a Marionette" (Gounod) (H.M.V. record ED5).
- 8.39: Baritone solos—Mr. Robt. Samson, (a) "Sacrament" (MacDermid); (b) "Blow, Blow, Thou Winter Wind" (Sargeant).
- 8.43: Band selection (descriptive) H.M. Grenadier Guards "In a Clock Store" (Orth) (Columbia record 9029).
- 8.47: Mezzo-Soprano solos—Mrs. Bessie Steward, (a) "Gather Ye Rosebuds" (Sanderson); (b) "If My Dream Ship Came Home" (McGeoch).
- 8.56: Tenor solo—John McCormack (violin obligato by Kreisler), "Ave Maria" (Schubert) (H.M.V. record DB578).
- 9.0: Violin solos—Mischa Elman, (a) "Les Farfardets" (Pente); (b) "Valse Caprice" (Rissland) (H.M.V. records DA507).
- 9.6: Chorus and orchestra, "Cavalleria Rusticana" (Mascagni) (H.M.V. record EB27).
- 9.10: Organ solos—Reginald Foort, (a) "Miniature Overture"; (b) "Waltz of the Flowers" (Tschalkowsky) (H.M.V. record C1386).
- 9.18: Tenor solos—John McCormack, (a) "Desolation"; (b) "A Dream of Spring" (from "Songs from the Chinese Poets") (Bantock) (H.M.V. Record DA917).
- 9.24: Orchestral—Berlin State Opera Orchestra, "Der Freischutz" (Weber) (H.M.V. record D1249).
- 9.30: Close down.

4YA, DUNEDIN (403 METRES)—SUNDAY, FEBRUARY 17.

- 5.30 p.m.: Children's song service, conducted by Big Brother Bill.
- 6.30: Relay of service from St. Andrew Street Church of Christ—
Preacher: Pastor W. D. More.
Choirmaster: Mr. Hickey.
Organist: Miss E. Stokes.
- 8.5: Relay from St. Kilda Band Rotunda of concert by the St. Kilda Band.
- 9.15: Close down.

Systems of Television

New German Apparatus

THE new German electric television invention, the "Telehor," the inventor predicts, will soon be used to transmit moving pictures, the Department of Commerce has just been advised by the Trade Commissioner at Paris, George R. Canty. The "Telehor" transmits direct from object without the necessity of taking preliminary pictures.

The report follows in full text:—

The "Telehor," the new German electric television invention which is considered to be a step forward in the field of electric television, consists of two parts, the sending and the receiving apparatus, both neatly packed away in two cabinets. On one end is the projection lamp that throws the picture of the object to be transmitted

into an apparatus that divides the light waves.

The playing of these light rays on sensitive cells produces electric currents, which are transmitted by wire or without wire to the receiving apparatus that receives the electric impulses, changes them back to light waves and then to a composite picture. Both machines are synchronised so that only one electric impulse is received and sent at one time.

The electric impulses of a picture are sent one after the other. It takes one-eighth of a second to send enough to make a complete picture. But since the eye sees light waves that come at such a frequency as a composite picture, the problem is practically solved.

THE inventor states that this apparatus, which will later be shown to the general public at the Radio Exposition, will be light and compact, and that anyone who has a radio now will very likely have a "Telehor."

In a demonstration pictures and objects were put under the lamp, over an opening in the first apparatus, and the pictures were astonishingly clear on the projection plate of the receiving apparatus, it is said.

This system differs from the wireless photography already in use in that it is not necessary first to take a picture of the object which is transmitted.

The inventor believes that his instrument will soon be used to transmit moving pictures, that research workers will use it to get pictures of places where human beings cannot live, such as the bottom of the ocean, or high up in the air, and that it will be of use for military purposes.

Our Mail Bag

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

Crystal v. Master Oscillator.

RE the test last night from 2YA, "Master Oscillator versus Crystal," I would like to let you know how the reception was in this part of the country. The first half of the programme was spoilt, absolutely, by fading. As a matter of fact, fading was so bad that, had it not been for the test I would have switched off. As soon as the crystal was put into operation the fading ceased, and the second half of the programme was thoroughly enjoyed, without one sign of a fade.—ROY S. COPLESTONE (Taranaki).

A Peculiar Case of Fading.

IN your last "Record" to hand I notice several listeners are requiring a change of timetable. I'm sure many listeners would agree to it. "Sheep-farmer" and "Wanganui" have my support in their suggestions to have, say, half an hour of gramophone music between six and eight p.m. Radio down here has not been worth listening to lately, static and fading being most annoying. I have noticed a curious incident. On tuning in to 1YA I found signals very loud for a few minutes, then they faded right out. I then tuned in 2YA and his signals were loud for a short while, and then faded. When 1YA was loudest 2YA was fading, and vice versa. I tried this several different times, always with the same result. I have noticed this on one or two nights only during this last fortnight.

"Canned music," as some call it, is greatly appreciated by those who have no gramophones, and we appreciate the efforts of the company to bring the world's artists to our fireside. Carry on with your good work. You can't please everybody—"SATISFIED" (Westport.)

Dance Music till Midnight.

IN the summer months, what with bowls and tennis, few listeners tune in before eight o'clock, with the result that they miss the sports results—in particular, the race results. It would be considered a great boon by many listeners if 2YA would announce these results at nine o'clock, or at closing-down time. It would only take five minutes to run quickly through the results of the races run that day, and even if the announcer missed out an anti-cyclone or two, nobody would mind very much. Just one other matter on this same subject—don't you think it would be a good idea to keep at least one of the YA stations on the air until midnight every Saturday night with dance music? It could, perhaps, be arranged that the stations take the late night in turns, and the additional costs to the company would not be great. What I am getting at is this. Nobody is going to bed at such an unreasonably early hour as eleven o'clock, and if you tune in Australia, they are still messing about with some beastly fight or motor-cycle race, and anyone who has started a dance programme generally wants to continue in the same strain. By twelve here, it

would be ten in Australia, and there would be a chance of getting further dance music from there.

Correspondence has been rife on the subject of B stations, and I should not be surprised if the writers on the subject have earned the reputation of being B wind-jammers. If further wind-jamming is permissible, I would like to suggest that the first thing to do before entering into a discussion on this subject is to inspect the profit and loss account and balance-sheet of the Radio Broadcasting Company of New Zealand, Limited.

I have to thank you very much for your kind attention to the numerous questions I have referred to you on previous occasions, and I wish to thank you in anticipation of your assistance in the matters before enumerated.—DIOGENES (Cromwell).

Heterodyning 1YA.

FROM time to time there have been published in your columns suggestions as to the origin of music on 1YA's news session. As is supposed by most listeners, the music does originate from an American station. Mr. John Luke's suggestion is possible, but has he observed that when the whistle, or heterodyne, is absent, music is not heard. This points to the heterodyning of the two carriers as being the cause. The "beating" of the two carriers together produces a small transference of modulation from one carrier to the other. In this manner, 1YA's carrier, besides being modulated from the transmitter, receives a very small percentage of modulation from the foreign station carrier, so that when a receiver is tuned to 1YA it is capable of receiving the foreigner, even though it is not powerful enough to receive him direct. This accounts for the fact that Mr. Luke hears the American with his receiver working at adjustments that would make it impossible for him to receive the "Yankee" direct. I have had similar experience with other stations heterodyning with one of our New Zealand transmitters.—"D.X."

One Good Programme, Anyway.

I HAVE not written to you before, but have grouched often enough about the programmes to my friends, but a programme like this afternoon's makes up for about three months' grouching. I do not know who selects the numbers, but sincerely trust that this afternoon's selector of numbers is given an opportunity to choose fairly often. Reception is by crystal (galena), and 6ft. straight exponential horn from R.R. (but built of galvanised iron) and Ampion AV4 unit.—"CRYSTENTIAL" (Brooklyn).

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EXIDE SERVICE STATION

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DURING the last week it has been just great as to DX. The Americans are coming in with plenty of volume and many at full speaker strength. KNX, on 285.5 metres, came through here on January 29 at full speaker strength and I had to cut the volume back. Their radio club hour is from 12 to 1 A.M.T. or 8 till 9 N.Z.M.T., playing request items for listeners. The announcer had the microphone near the telephone answering calls from all parts of U.S.A. He would then read out the name of the person asking for the request item. This was very interesting. He closed down at 9.18 p.m. N.Z.M.T. KFON, on 239.9 metres, announced that they have changed their call to KFOX. Has any D.X. listener heard this call? KHT, on 1YA's wavelength, came through at good speaker strength on Monday, 28th. I have received verifications from stations the last fortnight as follows: KHJ, KNX, KFRC, KFO, KYA, KOIN, KEX. This makes a total of 18 now and four more to come. Following is a letter from an American D.X. enthusiast. Cheerio. —S. ELLIS (Okato).

IN your answer to Mr. Ireland at Taradale, it was not KPLA as they had their wavelength changed on November 11 to 526 metres. KPLA has an output of 1000 watts. I think he heard KRLD at Dallas, Texas, 10,000 watts, or WFAA, Dallas, 5000 watts, both on 288.3 metres or 1040 kilos. I think the one on 420 metres was WGN at Chicago, 416.4 metres, 720 kilos, 15,000 watts. The 2B station might be 2BE or 2GB on 326 metres.

I have logged 55 stations so far, but the only foreign one is CNRV at Vancouver, B.C. KFON is now KFOX. Who is KFPR? I have what they call a "Sunset Ground": just a lot of chemicals mixed together in a can and five feet in the earth. Your friend, GECIL GORTON (Los Angeles).

THE D.X. CLUB

Views and News.

[KFOX was noted by one or two in our columns. It was thought to be a new station.]

Identity Wanted.

COULD any listener oblige me as to the identity of what is probably an American station operating on approximately 430-432 metres? I have twice heard this station, the last time being 12.30 p.m. on January 30, when the announcer was giving a summary of the evening's programme.—INTERESTED (Waipukurau).

More Unlisted Stations.

ON p. 3, issue of January 4, you ask for reports of stations. Below is list of some not included in your list of those heard since change of wavelengths. These were all heard recently but did not log date.

KJR, just above 3YA. This to-night at 7.30 (29/1/29).

WLW, on 2YA (trial of 4 a.m. session. Asked for opinions.)

WMAQ, about 2FC.

KFRC, San Francisco, 2 deg. above 2FC.

KFWG, San Francisco, about 1YA.

KFI, Los Angeles, about 4YA.

KRLD, Texas, 2 deg. below 2ZF.

WIZ, New York, 2 deg. above 2ZF.

CNRU, Vancouver, just above 2ZF.

KOMO, between 2UE and 2GB.

KWKH, Louisiana, just below 2BL.

KGO, Oakland, 3 deg. above 3LO.

None of these are in your list as reported. Best wishes to your interesting paper. Yours.—"EAST COAST" (Te Pora).

9XF Changes Hands.

I NOTICE in this week's "Record" Jno. Luke, Clevedon, inquiring about station 9XF, which used to come in at great volume about 12 months ago. This station has changed its wavelength and also its call-sign. The call is WENR and it logs in the same as JOAK, just below 2BL. To-night (Thursday), January 31, it came in at great strength and closed at 7.55 p.m. our time.

KFOX, Long Beach, and KNX, Hollywood, also came in at great strength.

testing period. When the tests are completed the station will replace our present stations, WENR and WBCN. These stations are owned and operated by the Great Lakes Broadcasting Company of Chicago, Illinois.

The new station is located on a 40-acre farm 22½ miles south-west of Chicago. The equipment is housed in a two-story brick building; the towers are 300ft. high and spaced 700 ft. apart. The equipment consists of a 50,000-watt crystal controlled transmitter built by the General Electric Company and sold to us by the Radio Corporation of America. We are operating on a frequency of 1040 kilocycles, or 288.3 metres, but this frequency may be changed when the new allocations are made, but you will be able to find this station listed under WENR and WBCN.

The studios of the Great Lakes Broadcasting Company are located in the Straus Buildings, 310 South Michigan Avenue, Chicago.—(Signed) E. H. Gager, Chief Engineer.

Some Good Results.

RESULTS obtained by me with a 4-valve set may be of interest to some of your DX readers: 2FC and 2BL every day on earphones, 4QG on several occasions. In the evening on speaker 38 stations, including 17 Americans and Fiji. On shortwave I have not done much searching, but have on various occasions readily picked up 5SW, 2XAF, 2XAD, W2XG, 2BG and PCJ. I had London one evening clearer than anything else I have ever heard on the speaker, the voice being so "natural" as to be uncanny. The foregoing results have been obtained from intermittent work over a period of several weeks only. I said that I had London one evening. I should have said early morning, as it was about 1 a.m. The daylight reception from Sydney is surely remarkable for this time of the year on four valves. W. A. WILTON (Mangonui).

Accuracy and DX.

I SAW a letter in our DX Club corner criticising DX listeners as to logging stations, and say some guess the calls. Well, I must draw Mr. Terrill's attention to this, that if he was a real DX enthusiast he cannot get Yankee calls clearly at times. It depends entirely on conditions. Also, I must draw his attention as to station 2BE. I have verified his reception on March 9, 1928. He may not have had the luck to log this station on his six-valve set. Stations heard this week are as follow: KFON, KNX, KEX, KGER, KHJ, KGO, WENR, KOIN, WLW, KPLA, KELW—all logged on a five-valve set. Cheerio.—S. ELLIS (Okato).

Good Record for Two-Valve.

MAY a two-valve receiver presume to join the DX Club? On January 3 and 4 I logged KNX, Hollywood, and I had him again on January 25. He talks about Paramount pictures, boys in red caps, and the Silver Fizz Orchestra. He gave the names of persons requesting "repeat" items, and at 9.15½ p.m. he signed off, stating that it was 1.16 a.m. there. My set was made by a Wellington amateur, and I have now had two Jap stations, and eight Australians. I am miles from any other valve set, so the reception is quite genuine.—"HAYFOOT" (Pirirua).

Correspondence Between Listeners

WE occasionally receive requests from interested readers asking to be put in touch with the writers of particular letters that have appeared in the "Radio Record." Without the permission of the correspondent concerned, we are unable to do this, and as a matter of general practice, in order to preserve the definite anonymity of correspondents, which is sacred to the Press, we do not keep any record of the actual writer of a letter, after having satisfied ourselves that the writer is genuine—the name does not even go to the printer.

In some cases we can quite appreciate that correspondence between those interested in radio would be of value, and we therefore suggest to our correspondents, particularly those in the DX Club, whose mutual interests call for the exchange of information in perhaps fuller fashion than can be undertaken in our columns, that they should allow their names to be published, so that those who wish may write them. The particular case that evokes this suggestion is a note from Mr. W. Jarvis, 177 Castle Street, Dunedin, asking that he be given the address of the writer signed "License 97600," whose letter appeared on January 11, 1929.

Following is a copy of a letter received from Mr. E. H. Gager, chief engineer of WENR.—W. G. STURGESS (Christchurch).

DEAR Radio Friend,—Please accept our thanks for your report and comments on the test programme from our experimental station, 9XF. This station is being operated as an experimental station during the preliminary

SAFE PICNICS BY RAIL

Cheap Trips to Charming Scenes

There is nothing so safe as the train, nothing so cheap, nothing so comfortable, nothing so reliable for the joyous summer picnic. For family parties or other parties or for the staffs of shops, warehouses, offices or factories, the people's railways give the best service to the best picnicking places in all districts.

Here are a few examples of the remarkably cheap "picnic" fares:—

Children up to 15					
		Years.			Adults.
9 to 12 miles	0 7			1 3
21 to 25 miles	1 0			1 10
46 to 50 miles	1 11			3 3

Get Helpful Information from the nearest Stationmaster, Passenger Agent, or District Manager.

Notes and Comments

By
"SWITCH"

SAT out an evening recently at a friend's house listening-in. Father wanted the operatic items, Mother was complacently satisfied with anything so long as there was no static. The eighteen-year-old daughter wanted love songs. The fifteen-year-old son demanded comic songs. As a result of this medley of musical tastes the dials were on the move all the night. Father would tune in something, and before he could enjoy the whole item round went the dials. While the daughter sat in ecstasies listening to something which appealed to her, the brother switched off on to another station. It was wicked, but the set was a recent purchase.

AN American broadcast technician has recorded a fine collection of amusing incidents in connection with his experiences at various broadcast stations. New Zealand broadcasting is not without its humorous episodes. One of these was associated with the flight of the "Southern Cross" from Australia to New Zealand. Station, 3YA, Christchurch, was putting across a perfect re-broadcast of 2YA, Wellington, when the announcer at Wellington said, "We will now change over to 3YA, Christchurch." As 3YA was at the moment hanging on to 2YA, an embarrassing silence followed the announcement from 2YA.

A HATAITAI listener discovered that a large tree to which he attached his aerial, a well-insulated one at that, was seriously interfering with reception. It was not until he changed his aerial to a 40ft. mast that he discovered that the tree had been a disadvantage. The sap in the tree, running as it does right down to the ground, makes the tree a very good "earth" with all its screening effects too. A picnicer informed "Switch" that the best "earth" he could find when he was out for the day was a large nail with the earth wire brazed to it, and driven into the trunk of a tree close handy.

ALMOST all Wellington listeners agree that 2BL, Sydney, is now the loudest station heard from Australia, and lately there has been a steady increase in the volume of all trans-Tasman stations. By the way, somebody forwarded 2BL, Sydney, 8s. recently, to give to "some church in Sydney." The names of the various churches which are broadcast by 2BL were played in a hat, and one was drawn, the winner being the Newtown Congregational Church. The various churches were unconsciously engaged in a gamble for the 8s.

A PUZZLED Wellington suburban listener lately asked "Switch" to look over his set as it had developed an annoying shrill whistle. The trouble was traced to the corrosion on a terminal of one of the dry "B" batteries. This terminal formed a connection with another "B" battery, and this created resistance between the batteries. The corrosion was easily removed with a piece of rag dipped in liquid household ammonia. There was some vaseline on the terminal to prevent cor-

rosion, but it had not been placed just where it was most needed.

SOME exceptionally attractive programmes have been put on the air by the YA stations lately. A Melbourne man who listened in as a guest of "Switch" expressed the conviction that the New Zealand programmes are a wonderful compromise with the varied musical tastes of the average antipodean community. The Wellington listener, he considered, had an ample variety to select from judging by what he had heard. In Australia, the visitor said, there was a general desire for band music, but jazz was rather overdone.

SOMEONE has written to the Press alleging that the Broadcasting Company take money under false pretences when they charge a country listener 30s. for a license to use a crystal set, whereas such a type of set is outside the range of the YA stations. This is the sort of "logic" which stands self-condemned. One may just as well contend that it is false pretences to receive a motor-car license fee from the owner of a car which cannot climb a steep street in which he resides.

MR. CLAUDE GREY, the well-known Shannon long-distance enthusiast, is picking up KNX, Hollywood, California, on three or four nights a week with such volume that his loudspeaker can scarcely stand up to it. KNX now closes down at 9.45 p.m., New Zealand time. On a recent night Mr. Grey heard a Japanese station broadcasting fairy stories in English.

WELLINGTON listeners have found long-distance reception improving steadily during the past fortnight. Although the Japanese stations are increasing in volume, they are still a long way from their winter strength. Some of the outer suburban listeners are getting the American stations on odd nights, but they are the exception. There seems to be strong conviction among the old-time listeners that the American stations do not come in like they did about five or six years ago.

SPEAKING at a gathering of scientists in New York a few weeks ago, Harlan T. Stetson and Greenleaf W. Pickard, of Harvard University, reported that radio reception conditions were better when radio was new. They said "sunspots since 1922 and 1923 caused poor radio reception. When radio was swinging into its stride five or six years ago, there were fewer sunspots than at present." This appears to endorse the experience of New Zealand listeners.

SUNSPOT activity of exceptional intensity has been observed to synchronise with magnetic storms on our globe, and these storms not only disorganise submarine cables, but also seriously affect long-distance radio reception. Possibly before long a worldwide scheme will be put into operation to collect data in hundreds of

localities regarding the effect of sunspot activity upon long-distance reception. The data when collated may reveal important results for radio.

A PROMINENT Wellington radio technician recently expressed the opinion to the writer that in the near future Morse code would be entirely superseded at the big land stations by facsimile radio picture transmission. At the Institute of Radio Engineers' meeting in New York early last month, Mr. V. Zworykin, of the research laboratory of a big electrical company, described a new system of facsimile radio picture transmission. This must not be confused with television or radio-vision.

MR. ZWORYKIN explained the design of a new system of what he terms "rugged apparatus for practical use, which does not require the attention of a skilled radio operator." Further, the system does not require a special preparation of the original picture, because the receiver records the copy direct on photographic paper." It was pointed out by a representative of the institute that Mr. Zworykin has simplified the delicate problem of the photoelectric cell to such an extent that fewer stages of amplification are required. This has been accomplished by the development of a very efficient optical system, which supplies the "electric eye" at the receiver enough light reflected from the picture even though only a small incandescent lamp is utilised for the illumination.

WELLINGTON listeners regretted the absence of a small radio transmitter on the launch which accompanied Miss Copplestone on her attempt to swim Cook Strait. It would have been a first-class "stunt" for 2YA, Wellington, to have kept on the air that night to give progress reports of the big swim. Naturally, without a small transmitting set on the launch nothing could be done by 2YA.

ALFRED O'SHEA, with whom New Zealand listeners are familiar through his studio numbers from the Sydney stations and per medium of gramophone records from New Zealand stations, is shortly proceeding to New York to sing with the Metropolitan Opera Company. He says: "With wireless the necessity for clear enunciation and diction is obvious. The audience must hear what you are singing about. Finally, there must be no forcing of the voice. Personally, I never use more than 75 per cent. of voice at any time."

THE topical chorus which 2BL, Sydney, has opened its evening session for years was deleted recently for a while to ascertain the opinion of listeners as to its popularity. There was a clamour for its reinstatement, and so the management has revived the custom.

PARTICULARS are given in an Australian exchange regarding the construction of an aluminium radio cabinet to make a light-weight receiver

ing set. The average radio set itself is not a heavy affair, and one does not lug it about from place to place. In the case of actual portable sets it is the weight of the batteries that has to be contended with.

MR RAY ALLSOP, a well-known Australian broadcast technician, is urging that the Commonwealth Government should erect 50,000 watt aerial-power broadcast stations in country areas to reach a wide radius of country listeners. He advocates these super-power stations in preference to numerous country relay stations.

MR ALLSOP suggests that a 50,000 watt station should be erected at once for experimental purposes. Various wavelengths should be tried to obtain the best results. He says stations of a few thousand watts would be sufficiently powerful in the cities of each State to supply the demands of the city and suburban listener. Experimental transmissions should be carried out on the shorter wavebands with a view to providing for the dwellers of the Northern Territory and other remote corners of Australia a possible service.

EXPERIMENTS have recently been conducted in America with underwater aerials, and the results obtained have justified the tests for various reasons. When a wire is placed in fresh water, it has been found that it can be submerged as deep as 60 feet without any appreciable decrease in signal strength. Yet in salt water, the signal strength drops off rapidly when the wire is submerged to any great depth. The underwater aerial is quite satisfactory for portable use, as camps are usually located near a lake or water supply. It is important, with the underground aerial, that the end of the wire is made watertight, since if water enters through the insulation, the wire will be earthed and the results obtained will be very poor.

A TOWNSVILLE (Queensland) listener is complaining to the Sydney radio press that 4QG, Brisbane, is being seriously interfered with by a heterodyne note from a Japanese broadcast station. In fact, he states, the Jap station completely smothered 4QG. He also reported that sometimes another Jap station heterodynes fiercely with 3LO, Melbourne. Other Townsville listeners have a similar experience. In the winter months some of us New Zealanders notice the whistle on top of 3LO, and it is sometimes sufficiently loud to spoil reception from the Melbourne station.

A LISTENER in Gunnedah (N.S.W.) reports that the underground aerial system he has installed is his salvation, as during the summer it is only possible to hear about 10 per cent. of even the programmes from 2FC and 2BL on the usual outdoor aerial. Two New Zealand listeners who have thoroughly tested an underground aerial made by an American Company found it a failure as it tremendously reduced signal strength.

Quality Improved by a Filter Choke

Details of Constructing and Using



CORRESPONDENT writes: An output filter is a useful device and is a great aid towards stability in a low-frequency amplifier. In certain types of receivers it is practically essential, for reasons that will be given later.

Most readers know that it is the usual practice to choose a power valve of some kind for the last socket—the output stage—of a set designed for loudspeaker work.

Now in many of the designs published in the periodicals a choke-filter output is included as part of the set. In others there is no filter device. Whether or not such an arrangement should be included depends largely upon the purpose for which the set is intended.

It really reduces itself to a question of D.C. resistance. The average power valve takes a fairly heavy current. Readers may not be quite clear as to why a power valve is necessary.

Power Valves.

WE know that if we wish to work a loudspeaker we must amplify the signals so that the volume is adequate for our particular requirements.

If the signal will only work a pair of 'phones at fair strength, it is no good expecting the speaker to give you anything more than 'phone volume. The actual signals which the speaker receives must be many times greater than this. When so much energy is being handled, the last valve must have a characteristic which will permit sufficient grid bias to be applied, in order to avoid distortion.

This necessitates a valve having what is termed a low impedance, or in other words a power valve.

These valves take a fairly high anode current because of their comparatively low impedance or resistance. I have explained this, because it is all connected with output filters.

Large Volumes.

WITH small sets, such as two or three-valvers, it is scarcely possible for the volume to be large enough to overload a small power valve with, say, 120 volts H.T. and 9 volts grid bias.

This applies in particular to the former class of receiver. The exception might be if the set were employed within the "shadow" of the local station; but even so, one would expect the detector valve to be overloaded first in the case of a two-valve set.

A small power valve can be used fairly safely directly in circuit with a loudspeaker winding, because the current is not so great as to cause damage to the windings (assuming the instrument to be of high quality) and because the drop in volts across the windings is not large.

When, however, we come to the question of four and five-valve sets, the use of an output filter becomes very necessary. Such sets are quite capable of delivering sufficient signal volume to overload a small power valve on the local station. A super-power valve, that is, one designed to handle a greater volume, then becomes essential.

Now a super-power valve may easily take twice the anode current required by a small power valve, and in consequence it is not wise to connect the delicate windings of a loudspeaker in series with it. It is not solely a question of current, since one has also to consider the mechanical stresses on the windings produced by the greater power which is being handled.

Preventing L.F. Oscillation.

THEN, again, the heavier current increases the volts dropped, or in other words the volts lost across the loudspeaker windings. This drop is

equivalent to so many volts less H.T. at the anode of the valve, and it may be serious with one of the super-power type—in extreme cases producing distortion.

Thus it is an advantage to pass these heavy anode currents through the robust low-resistance windings of a suitable filter choke, feeding the speech or music impulses to the speaker via a condenser, in this way isolating the loudspeaker from everything except the fluctuating currents. In a large set, which is capable of handling a considerable intensity, there is always a danger of low-frequency oscillation commencing. By separating the steady anode current from the music impulses with a choke-filter circuit it is frequently possible to stabilise an otherwise troublesome set.

So much then for the value and use of a choke. Following are constructional details as described by "Megohm" some time ago. These should interest those who, having their holidays, wish to construct something that will improve their reception.

Winding the Coil.

THE spool is made on a wooden former 7-8in. by 3-8in. by 2 3-16in. long. This is covered with one or two thicknesses of manila paper and ends of thin fibre or stout millboard fitted on and glued. The winding should be done in a jig and the spool ends supported in some way by cheeks fastened to the winding spindle, in order to prevent them being forced outwards by the wire during the process of winding, or it can be glued firmly to the manila paper. The beginning and end of the winding, which should be of thicker wire, are passed through holes in the spool ends. The spool is to be filled with 36's enamelled wire, over half a pound being required, which gives about 8000 turns.

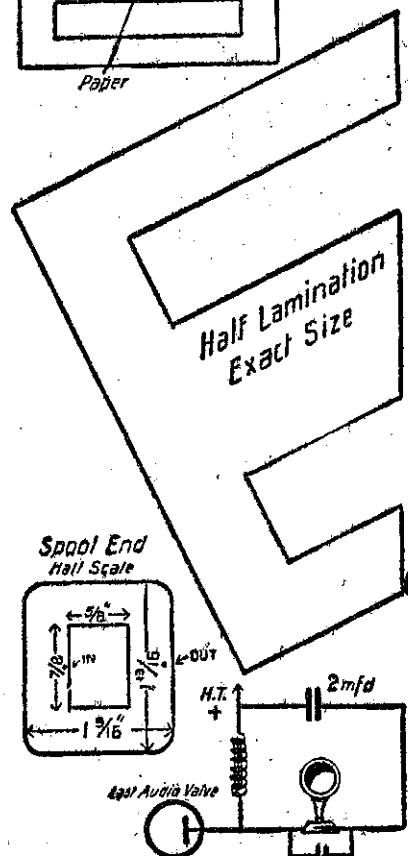
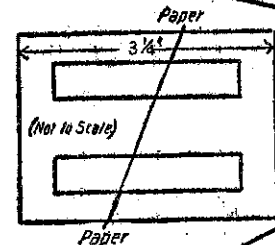
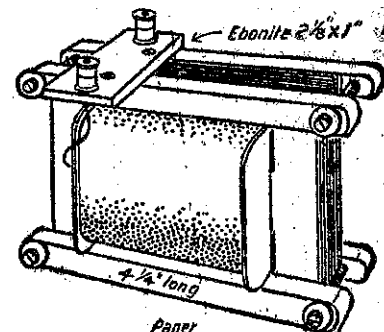
The wire is run in irregularly in patches, piling up a certain thickness, say 1-16in., and then passing along to another pile until the other end of the spool is reached. Then a strip of writing paper is put round, care being taken that it closes up to the ends, as although the wire is being put on irregularly, one layer must not be allowed to come in contact with another by wires sinking down at the ends. This easily happens, especially if the spool ends are not well supported. When the spool has been filled and the lead-out wire soldered on and passed through the hole in the end, a covering of stout paper and then a piece of empire cloth are put on to protect the winding.

The Laminated Core.

THE core is built up of laminations of ordinary tin-plate, 28 gauge, in full size, eighty pieces being required. The tin has the advantage of being thinner than black iron can be obtained, and thus serves to more efficiently suppress eddy currents in the core. Stalloy can be used, but it is not always procurable. One sheet of tin 28 by 20 inches will be more than sufficient for the laminations.

The tin should be marked out into 80 squares $3\frac{1}{2}$ by $2\frac{1}{2}$ inches, these squares being cut out, after which a cardboard template is made of a complete lamination in one piece, to be laid on each piece in turn and scratched round the two "windows" to mark their position.

Now a piece of card is taken the size and shape of half lamination, but without the windows. This is used as a guide to scratch the diagonal line



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The laminations are now to be shel-laced with one coat on both sides, for which purpose shellac is dissolved in methylated spirits and applied with a brush. This coating of shellac is important, as its purpose is to insulate each lamination from the next.

When the shellac is thoroughly dry, laminations, all the same way round, are packed into one end of the coil, the last few being pushed in under the top one, and having the sharp corner cut off the central piece to prevent the manila being cut. A piece of strong paper is to intervene between the two ends of laminations where they meet outside the coil, so large enough pieces are placed there, while the laminations on the second side are packed into place. As many must be got in as possible, so that both lots are free from looseness. The ends of laminations must both press against the paper, so that they are only separated by its thickness. This forms a gap in the iron, the object of which is to prevent magnetic saturation of the core by the direct current passing through the coil.

Final Operations.

THE wooden clamps, four in number, are 4½ inches long and 7-16-inch square, drilled at each end to take a

3-8 brass bolt two inches long, about a half-inch of which can be cut off after all is assembled. A washer should be put under the bolt head to protect the wood, but at the other end the nut will be sufficient. A slip of ebonite about 2-1-8 by 1-1-8 inches is now screwed to the clamps and fitted with two terminals, to which the leads are connected underneath.

When completed and stood on end the choke occupies a floor space of about 8 by 1½ inches, and, of course, the ebonite slip may be placed in any convenient position. A small diagram of the circuit is included.

The wooden clamps should be finished with the shellac applied with a piece of rag and rubbed. The clamping bolts must not be allowed to touch the ends of the laminations, and so connect some of them together. If care and finish are put into the work the coil has quite a neat appearance. If desired the outside of the laminations may be finished with black cycle enamel.

Experiment may show that a higher value than .001 gives better results for the fixed condenser across the speaker. With no condenser there, tone is inclined to be harsh and thin. Too large a capacity causes woolliness.

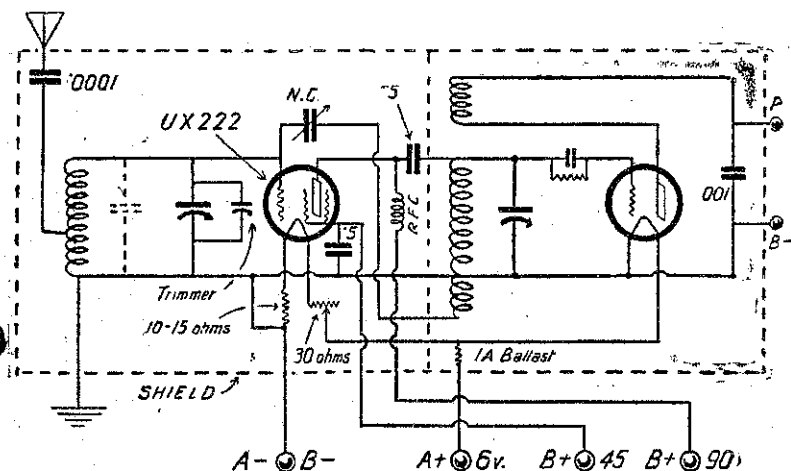
The Screen Grid Browning-Drake

Now on the N.Z. Market

MANY correspondents have written asking for a diagram of the screen grid Browning-Drake, and so this week we publish that diagram with a few notes on the set, and this new type of Browning-Drake should prove equally as popular as its predecessor has done.

The new upright type of 4-element valve has made possible the greatest single advance in radio-receiving-set

fully-placed shielding and without rather critical operation. While it is true that shielding appears to be absolutely necessary for anything like good performance when the upright valve is used with the tuned-plate method—now most generally employed—it is not essential to employ the tuned-plate impedance for very fine results. In fact, much more stable and



R.F. and Detector Stages of Browning-Drake showing adaptation of Shield Grid Valve

performance of any new development within the last few years. As soon as its possibilities became known it was clear that a standard of radio reception far above anything previously experienced could be obtained, both as to sensitivity and selectivity.

Easy to Build.

THERE has been a certain impression that it was difficult to build a receiving circuit using the upright, without the use of a great deal of care-

otherwise satisfactory operation is obtained if a correctly-designed radio-frequency transformer with a very high primary impedance is used instead.

No Neutralisation Troubles.

WHEN one of the new upright valves is used with such a R.F. transformer, in connection with the Browning-Drake circuit, not only is the sensitivity or distance-getting ability of the receiver improved to a marked degree, but also the necessity for neu-

tralisation, and any tendency toward undesired oscillation of the radio-frequency stage completely eliminated. This condition results in better tone quality, as the regeneration in the detector circuit may readily be controlled without affecting the stability of the radio-frequency stage.

THE constructor should not find it difficult to complete this new receiver, especially as units comprising the coils, condensers, and controls are already on the market. These new units are very fine, and should add greatly to the popularity of this receiver. One dial control is used, and a special balancing condenser allows of maximum tuning capacity.

Tips and Jottings

Soldering Lugs.

WHEN soldering to lugs on fixed condensers, transformers, and the

like, a wet or damp rag should be placed over all but the part to be soldered, as the heat of the iron will, in the first case, melt the wax that insulates the sheets, whilst, in the latter case, the soldered connections inside the transformer may be loosened.

A Telephone Hint.

TO get the very best results from D.X. work or crystal reception of the local station, really sensitive telephones are essential. Cheap 'phones are not as sensitive as more expensive ones, but they can often be greatly improved with a little judicious doctoring. When a diaphragm is vibrating, the point in the centre is undergoing a great strain and energy is used up instead of making sound waves. If this strain can be relieved a little the results will be better. A small round hole 1-16in. diameter drilled through the centre of the diaphragm will give a marked improvement in signal strength.



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The Operation of the Five Electrode Valve



BEFORE discussing the advantages of the pentode or five-electrode valve, it will be necessary to investigate the limitations and defects of the ordinary three-electrode valve when used as a power amplifier in the last stage of an audio-frequency amplifier. For a valve to function satisfactorily in this position, it is essential that it should be able to handle a large amount of power without distortion, and in order to be able to do this it must have a high mutual conductance, and must be able to accommodate a large grid voltage variation. The mutual conductance of a valve is the increase of plate current produced by raising the grid potential by one volt. It is, therefore, represented by the slope of the characteristic curve of the valve, and the steeper the slope, the greater is the mutual conductance. English manufacturers usually express the mutual conductance or slope in milli-amperes per volt, whereas American makers use the micromho — one micromho being equivalent to 0.001 milli-amperes per volt.

Mutual Conductance.

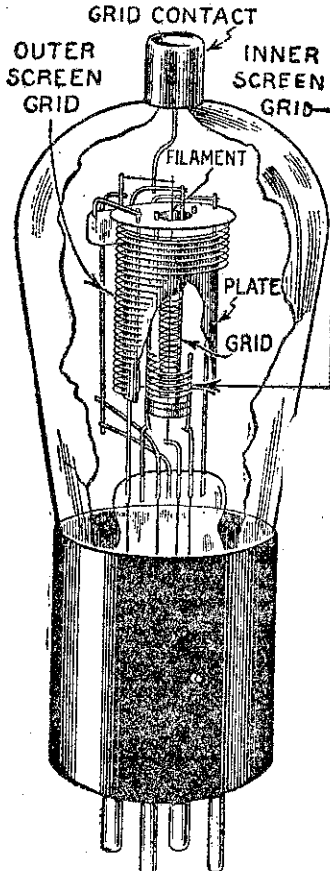
WITH the three-electrode valve, the mutual conductance of the valve, measured under working conditions with a load (such as a loudspeaker), in the plate circuit, is considerably smaller than when measured under no load or static conditions. It is the static curve, measured with the "B" battery potential applied directly to the plate, that is usually published, and this, therefore, does not give a true indication of the mutual conductance measured under working conditions. Furthermore, with the three-electrode valve, the greater the amplification factor of the valve, the greater the difference between the no-load mutual conductance and the true working mutual conductance.

It follows from the above facts that to produce a three-electrode valve which will operate on a reasonable plate voltage, and yet have a high mutual conductance, the amplification factor must be sacrificed. Thus it is that many of the usual power valves have a factor of only three. The amplification factor of a valve is a calculated factor that would only be obtained with an infinite impedance in the plate circuit, and under the best working conditions the amplification usually obtained from a power valve is about one-half of the theoretical figure. Such power valves,

therefore, add very little to the volume of sound, but act merely as a source of power to drive the loudspeaker.

The Question of Overloading.

ANOTHER point to be considered is that, since these valves amplify the signals to such a small extent, it is necessary that the second last valve should handle large variations in grid voltage. One of the difficulties of resistance coupling, with a valve of low



The UX222 Type Screen Grid.

amplification factor in the last socket, has been the liability of overloading the preceding valve, owing to the relatively small grid variation that the high mu valves, usually employed, are capable of handling.

A still further disadvantage of the three-electrode power valve is that the mutual conductance varies with the frequency of the note to which the loudspeaker is responding. The result is that the lower notes are amplified to a greater extent than the higher notes. In old-fashioned sets, with poor amplifiers and speakers, this fact may have been an advantage, but with modern apparatus, capable of even response over the whole musical scale, it is a decided fault.

The Five Electrode Valve.

HAVING seen the limitations of the three electrode power valve, let us turn to the five electrode valve and consider how it compares with its ancestor. By the addition of two extra elements to the valve, the manufacturers have produced a valve with an amplification factor of one hundred, a mutual conductance of 1.8 milli-amperes per volt (which is greater than most power valves), and capable of accommodating a grid swing at least as great as a 201A type valve. Furthermore, the mutual conductance on full load is just as great as on no load. This valve, therefore, is capable of handling more power than most other valves. In fact, it can deal with almost as much power as super valves of the 210 type, and yet it can amplify the signals to equal or even greater extent than the best high mu valve previously produced.

It cannot accommodate the same grid voltage variation as the usual power valve; but this is no longer needed when the amplification factor is one hundred instead of three. For the valve can supply all the required volume without a large grid variation being applied to it.

We saw that in the three electrode valve, the mutual conductance varied with the frequency. With the pentode, the amplification is independent of the frequency, and even amplification over the whole musical scale is obtained.

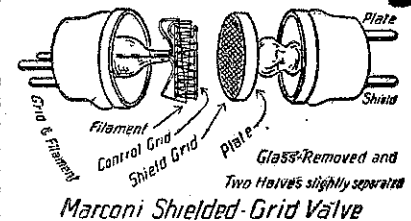
Considered from all angles, the pentode appears to be the ideal valve to be used in the last socket of any power amplifier, and a detector valve, followed by the pentode, will give results very nearly equal to the usual two-stage amplifier. To install the valve requires no alterations to the wiring of the receiver, the terminal provided merely being connected to the B battery positive side of the loudspeaker. As is the case with any power valve, the pentode requires ample B battery voltage and current, and it is useless to install the valve unless these are available. Where the receiver is operated from a battery eliminator the use of the pentode in the power socket of the receiver will vastly improve the volume and tone of the set.

The Screen Grid Valve.

WITHIN the last week, two or three correspondents have written in asking for particulars of the Screen Grid Valve, particular as to which terminals are which, so that we go to a little length to describe the operation of these valves and their method of use in a set.

In a recent issue we discussed fairly clearly the theory of the screen grid and the pentode. The following summary from that article may interest those who are using this valve:—

In the screened-grid valve plate-grid capacity is reduced to something so small that its effects, provided that the lay-out and wiring are suitable, are almost negligible. Between the control grid and the plate a screening grid is introduced. This is kept at a fairly high positive potential. It acts as a capacity screen between the two electrodes, preventing feed-back from



circuiting. Its presence has also another important effect: a very high amplification factor can be obtained in the screened-grid valve, an overall magnification of 30 or 40 from each H.F. stage being obtainable upon such wavelengths as those on the broadcast band.

The screen grid valve was developed to fulfill two requirements: very high amplification and stability. Numerous methods of preventing oscillation in high frequency circuits have been invented, neutralising methods being first tried for elimination of this, and whilst being successful to some extent, are far from perfect. Another method is to make the inter-electrode capacity of the valve almost negligible. In fact, this has been accomplished in the screen grid valve.

Types of Screen Grid Valves.

AT the present time, there are three different types of screen grid valves on the market:

1. The Osram 625 and Marconi valves, that need horizontal mounting, and have leads going to each end. The small diagram shows such a valve.
 2. The English and Continental upright type. These in appearance are almost the same as the ordinary 3-electrode valve, but have a small cap at the top. This cap connects with the PLATE of the valve. The four pins at the base connect with the filament as usual, the grid to the grid, as in the ordinary valve, but the PLATE pin goes to the GRID CONTROL OR SCREEN GRID.
 3. The American type of valve, or UX222. The internal arrangement here is very similar to the English valve, but the terminal at the top of the valve is the GRID CONTROL, so that the four prongs at the bottom will go to their usual destination, that is, the filaments, the grid, and the plate. The diagram is that of the American UX222.
- Constructors, when building from a systematic diagram, should bear these points in mind, as the valve they are going to use may be different from that described by the writer,

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L. H. WRIGHT

Radio Specialists

Regeneration—in Theory and in Practice

Various Methods of Control



RECENTLY quite a few correspondents have written in regarding reaction and its control. Some time ago an article by "Megohm" appeared explaining this, and the following are the salient points of that article:—

INSIDE a valve when in action we have the filament heated by the A battery, which causes a stream of electrons to be shot off or "emitted" from the filament. These electrons, being negative, are attracted to the plate, which is always positive on ac-

count of the B battery current which flows from plate to filament and back to the B battery. The voltage impulses of signals that come to the grid have a great effect upon the conductivity of the space between the filament and grid with regard to the flow of electrons, so that as the grid becomes more or less negative, the flow of the electrons decreases or increases.

In this way the small impulses on the grid are able to produce larger changes in the plate circuit, and thus amplification is obtained.

From this it is seen that there is more energy flowing in the plate circuit than in the grid circuit, so that if we can feed back a little of the plate circuit energy in such a way as to increase that which is already in the grid circuit, this increase will be amplified and appear as a still greater increase in currents flowing in the plate circuit.

Damping Effects.
THERE is always a certain amount of "damping" in a wireless circuit, which tends to make signals die down. We can prolong the dying-down process by supplying energy to compensate for that which is lost, so in an oscillatory circuit we can feed in energy and wipe out the effects of damping.

If we use reaction to feed energy back into the grid circuit of a valve we can so adjust matters that the oscillations produced by passing waves are prolonged and die away gradually, or we can feed back a larger amount, so that once oscillations are started, they are maintained indefinitely. This latter condition is called "self-oscillation," and occurs when the energy fed back balances that lost in overcoming resistance, and so on.

This process is equivalent to reducing the damping of the circuit, and it is most beneficial in increasing the sharpness of tuning of the circuit, since the lower the losses by damping, the sharper the tuning, and this holds good up to the point at which self-

oscillation commences, when the damping is said to be reduced to zero. Regeneration, then, is the action by which part of the energy from the plate circuit of a valve is fed back into the grid circuit.

Methods of Control.

IT is plain that the amount of feedback must be under the control of the operator. For strong incoming signals little or no feedback may be required, while for very weak signals the maximum allowable feedback must be used. There is always a capacity feedback through the plate to grid capacity of the valve and the amount of regeneration through this valve capacity varies according to the construction of the valve.

The added means of feedback must be controlled so that this combined with the energy passing through the valve will equal the desired value.

Regeneration is usually applied only to the detector valve.

1. Tickler Coil Control.

DIAGRAM 1 shows reaction controlled by a tickler coil, connected in the plate circuit and coupled to the tuned coil of the grid circuit. The construction of the tickler coil is shown in diagram 2.

The tuned winding, which is the secondary of a radio frequency transformer, and the primary winding of this transformer, are wound on a stationary former in the usual way. The tickler coil former and extends through which rotates within the stationary former. A shaft is attached to the tickler coil form and extends through

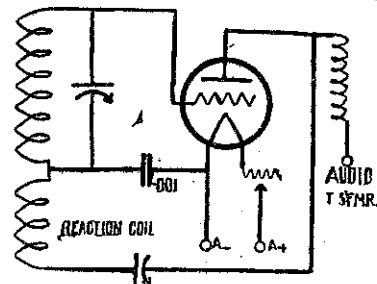


Diagram 2. Condenser Control

to a control knob. If the tickler coil is small, consisting of ten turns or less it must be placed close to the secondary coil. If the tickler is large, containing fifteen to thirty turns, it may be placed farther away from the stationary coil.

As the tickler is turned to increase its coupling to the stationary coil, the effective inductance of the tuned stationary coil is increased. Therefore, the tuning point at which the circuit becomes resonant or tuned to a certain frequency will change with the changes of tickler adjustment. In other words, reaction controlled by a tickler requires that the receiver be retuned after adjustment of the tickler.

This is a rather serious disadvantage, since a receiver cannot be logged unless a note is made of the tickler setting.

2. Resistance Control.

There is another method of using the tickler coil—that of placing a variable resistance of 50,000 ohms in the

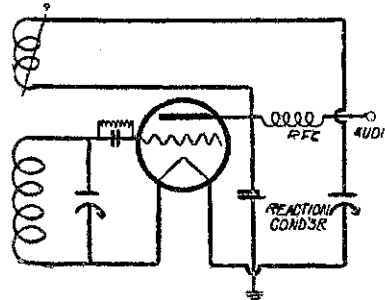


Diagram 3. Combination Method.

regenerator circuit. This may be done in series or in shunt with the tickler and the audio circuit. The method has very restricted application.

3. Condenser Control.

Diagram 3 shows a method of controlling reaction by a condenser as a bypass for the radio frequency energy in the plate circuit. Here the tickler winding forms part of the tuned coil winding. The tickler winding should have a number of turns equal to about one-fourth the number of turns in the tuned portion of the coil.

4. The Combination of Moveable Tickler and Condenser.

Far the best method is the combination of the moving tickler and the condenser method as in diagram IV.

The plate of the valve is connected to the tickler and to the audio transformer through a choke. The other end of the tickler is connected to the stator plates of a condenser, while the moving plates go to one of the filament leads. That is, the control condenser is in series with the tickler.

Preliminary Adjustment.

WHEN making the preliminary adjustments for this system the condenser should be turned to maximum capacity (plates full in). Connections to the tickler should be reversed and tried both ways. The connections are left in the way that produces maximum regeneration or oscillation. With the condenser still at maximum capacity the tickler is coupled closer and closer to the fixed coil, that is; the knob is turned towards full on until oscillation takes place. Oscillation may then be prevented and regeneration controlled by variable condenser. The less the condenser capacity the less will be the regeneration and the greater the condenser capacity, the more regeneration will be obtained.

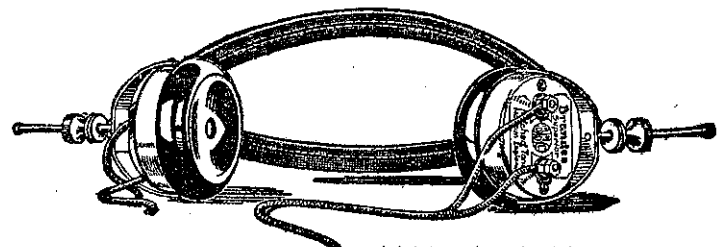
If it is impossible to obtain sufficient regeneration at the low frequencies or higher wavelengths it will be necessary to increase the coupling or the number of turns on the tickler coil.

When it is found that the set bursts into oscillation when the tickler is very little in the field of the tuned coil, that is, that the number on the dial is yet low, it indicates that there are too many turns on the coil. If there is a difficulty to get the set to oscillate the number should be increased.

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I FIRST started by constructing the trickle charger described by "Pentode" in the "Record," writes W.A.R. (Martinborough), exactly to specifications. I used pure ammonium phosphate, and a great time I had procuring a half-pound of it, too; also a rod of pure aluminium 3-8in. thick, but just sufficient current came across to put a small speck of red in a torch bulb, nor could I get anything better.

Not liking to be beaten I delved about with jars and things, using whatever aluminium I could get hold of, and tried out somebody's suggestion, using borax for a solution. I had

The Pros and Cons of Electrolytic Chargers

reason to believe that I was doing all right by using large saturated solutions of borax and large surfaces of lead and aluminium, when I made the discovery that the lead was not essential, that iron or tin did just as well. By this time I was contriving quite ingenious electrodes and finally constructed an efficient apparatus.

I thought, if tin will do in place of lead, why not put the solution in a tin, a much larger surface will then

be presented to the solution. Working on this idea, I cut down a two-gallon cylindrical tin that had contained oil, placed a thick piece of "Rubberoid" in the bottom, poured the solution in, and then used the household aluminium pots.

To keep the pot down I filled it with water, which also acts as a cooler, though I have already found that the larger the electrodes, particularly the aluminium, the heavier the currents may be handled without heating. I then put about 150 watts in the circuit for about ten minutes until the bubbles appeared on the surface of the pot. Then I hooked up a 3 amp. wet cell that I had run out dead flat, and with the lamp's 150 watts still in the circuit held the charger connections to the posts of the battery for five seconds. I then applied the torch bulb to the battery or cell and it lit up bright for 5 seconds, dim for five seconds, then slowly died out. I repeated this several times for longer periods with the lamps in the circuit and using the secondary 12 volts from the transformer, and proved without a doubt that the charger was working.

Being curious to see what current the rectifier would rectify without heating, I put the iron in the circuit. The iron passes somewhat in the region of 3 amps, and although I had to switch off every now and again on account of the iron becoming hot, the solution only became lukewarm, which I soon remedied by putting the rectifier in a half bucket of water. Of course one would not want to rectify 230 volts at 3 amps, but the point is that from dead flat I could put electricity into the cell with the iron in the circuit.

I then tested the efficiency of the apparatus with a voltmeter two-way, across the secondary of the transformer, 12½ volts, across the jar 12 volts. This seemed good to me, 12 volts rectified sounds all right. The trouble is the transformer does not deliver 12 volts at a ½ amp. I know this, because I hooked a ½ amp. valve across the secondary of the transformer, and it did not light up any brighter than it does off a 6 V.A. battery. I borrowed another transformer from another radio experimenter, who also failed to get the trickle charger going, and hooked it up in parallel. Result, 12 volts, valve lit up considerably brighter. I am inclined to think that these transformers singly deliver 12 volts at about 1-10 amps. This would light the valve up about the same as the 6 volt A battery would. Is this not so? Amp. meters refused to work, of course, on the A.C. side, and, strange to say, milliamperes refused to work on the rectified side.

Several failures round here to get any current from the rectifier probably rise from the fact of the low amperage the transformers deliver. I know that it took 24 hours to charge the 2-volt cell 3 amp. cap. And in connection with this I may state that I constantly tested the voltages throughout. Disconnecting from the cell, of course, which shows 2 volts when charging, also the ½ amp. valve appeared to light up just as bright across the rectifier, as it did across the transformer.

Before leaving this subject, I would like to pass on a tip in connection with testing. Before the electrodes are

formed, if a pair of phones are placed with the positive phone tip on the aluminium, and the negative tip to the negative of the charger, the "A.C." hum will roar in your ear. When the electrodes are formed the hum disappears altogether.

When creeping of the solution takes place, or the aluminium becomes pitted or covered with a sludge, the "A.C." hum comes back.

Another test: Switch off and apply phone tips one to each electrode; note condenser discharge.

The great drawbacks are: Borax creeps and quickly forms a deposit on the electrode. The fact that you have to use a saturated solution makes the creeping trouble a nuisance. If paraffin oil is floated on the top, the borax crystallises at the sides and bottom. Also, I have been using old pots, kettles, etc., which are not pure aluminium, and corrode in about 48 hours.

To obtain ammonium phosphate and pure aluminium here in Marlborough is almost impossible. I had a service car driver hunting all Wellington for ammonium phosphate, and he eventually procured half a pound, all there was in the shop, and I don't think it was any good either. I would like to know:—

(1) Where can I obtain "pure ammonium phosphate" and pure aluminium sheet, and any idea of the price? Also, where can I obtain a transformer about 12v. and ½ or ¾ amps? (Sharland's, Dixon Street, Kempthorne Prosser, Victoria Street, Wellington, can supply pure ammonia phosphate. Pure aluminium from John's, Ltd., Auckland, and Ballinger's, Wellington. General Electric Co., Wellington, should supply the transformers, but 20 volts output would be most suitable.

(2) Do you think it practical to put a low voltage lamp or lamps in series and send the 230v. with about 100 milliamps across the jar, and after rectification pass through an electrolyte condenser? Then arrange a series of resistances to tap of say 22, 70, 90, 180 volts? In fact to construct a B eliminator? Or, secondly, would it be possible to drive the last stage of my push-pull amplifier with this arrangement? I think that owing to the condenser characteristics of this type of rectifier the 100 milliamps will be easy to filter.—Electrolytic condensers only operate on low voltages. The method is unreliable.

(3) With pure aluminium and pure ammonia phosphate how long will the aluminium and ammonia phosphate last? Tin seems to be unaffected by borax, and I believe it will resist pure ammonia phosphate indefinitely.

THE following suggestions may be useful to the correspondent, who has gone to some length to describe modifications worked out by him. It appears that the resistance is rather too great for 12 volts to break down, so that it will be necessary to use a transformer with an output of at least 20 volts. Such a transformer tapped at, say, 10, 20, or 30 volts would be the most suitable, for then different tappings could be tried.

Electrolytic rectifiers for B supply are quite unreliable unless 4 to 8 jars are used. Pure aluminium ought to last from six months to two years, but the pure metal is difficult to obtain. Cheap, impure metal was found to work quite well in the model made up and described by "Pentode." At the present time, it appears that about 300

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The Plate Circuit.

IT is necessary, now, that the electrons in the filament be drawn to the plate of the valve. For this reason the plate must be heated by a flow of electricity, different from that in the filament, to attract the electrons, and to accomplish this a B battery is introduced in the circuit. The positive terminal will go to the other side of the terminal, while the negative terminal to link the B battery up with the remainder of the circuit, will go to the A negative or A positive. If it goes to the A positive, the B battery voltage will be raised by the amount of voltage on the A battery; thus the A battery helps the B.

This now completes the one-valve amplifier. All one-valve audio amplifiers are more or less the same as this. These are the general principles for audio amplification, and it will be found that even the most complicated receivers will fall back on these fundamental principles.

A diagram showing such a circuit was given last week.

The Double Grid and Pentode Valves.

WITH these types of valves an extra grid or grids is provided. In the case of the double grid valves the extra grid reduces the plate voltage if necessary and, in the case of the pentode, helps to boost up the amplification. In the case of the pentode a high plate voltage is still required, but the amplification and the capacity of the valve is greatly increased.

With both these valves an auxiliary terminal is provided on the side, and is to be connected directly to the B positive. This may be done by running straight on to the battery or going to the positive terminal of the speaker. The correspondent wrote in last week's issue asking for some details of the use of this valve. They simply can't be given. All is plain and straightforward.

The double grid valve requires only 22½ volts on the plate, and is highly suitable for a single stage of amplification such as the average crystal user would like to add. "Galena" has been using such a circuit for some considerable time, and it has given nothing but satisfaction. The valve makes the set no more difficult to operate, and has a very low running cost.

If the constructor is willing to provide a high B battery voltage, that is, approximately 90 volts, he can do little better than employ the Pentode valve, which will give very fine amplification, but with a fairly high running cost. The diagram showing the connections when there are two grids is shown below. The full descriptions of such a set appeared in our special issue, but the foregoing remarks will enable any constructor to use one.

per cent. of the efficiency is being lost through an overgreat resistance, which means that the whole trouble is centring round the low voltage delivered from the transformer.

E. F. C. (Papatoetoe) writes asking whether to charge the A battery he should connect up the B positive and B negative and leave in the lamp. He has not had good results.

ANSWER: B positive and B negative should not be connected for charging the A, neither should the lamp be left in. This correspondent might also be referred to the above suggestions, and, in addition, he would be wise to strengthen his solution.

Our Crystal Corner

By "Galena"

As far as the writer can ascertain the Philips A441 is the only valve of the double grid type obtainable in New Zealand. However, of the Pentode valves most of the makers now turn out some very fine products, and anyone constructing should consult their dealer to find out which he considers to be the most suitable make for his requirements.

Notes on Assembly and Operation.

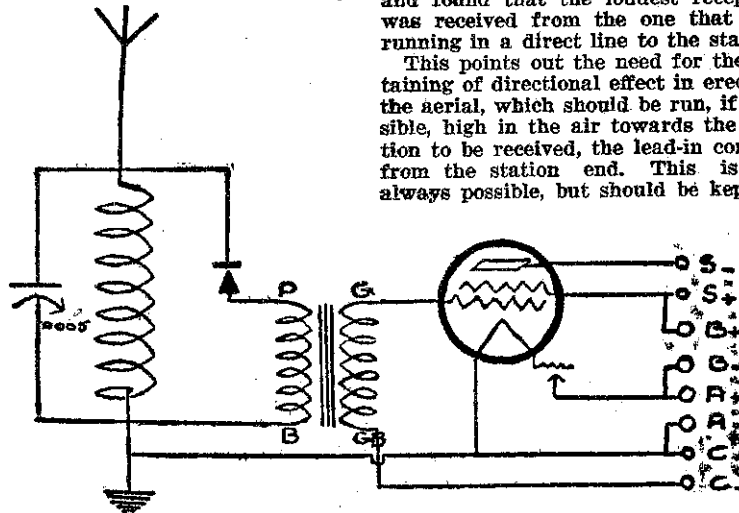
IN choosing the amplifier for his crystal set, the beginner has first to take into consideration his locality. To work an amplifier of too low power in a bad locality does not give

appeared previously in our paper, particularly in the special issue.

There is one outstanding point that the amateur must bear in mind, that is, the direction of the aerial.

One young constructor known to the writer had a very ingenious aerial. After some effort and the co-operation of all the family, he had raised a conspicuous mast some 40 feet into the air. From this, he ran several wires to his house, which was much higher than the aerial. He had spaced the wires so as to get the maximum effect, but had the aerials so arranged that he could receive off one wire if he so desired. He then tested each separately, and found that the loudest reception was received from the one that was running in a direct line to the station.

This points out the need for the obtaining of directional effect in erecting the aerial, which should be run, if possible, high in the air towards the station to be received, the lead-in coming from the station end. This is not always possible, but should be kept in



Theoretical Diagram.

satisfaction, and great care has to be exercised in the selection of the right circuit for the right position. It is well to look around among the other radio enthusiasts in the district, and find out how reception is in that area.

This varies from place to place in a most remarkable manner. Reception may be good in one point, while in another, just a few miles away, it may be particularly bad, and require another valve to bring the crystal output on to the loudspeaker satisfactorily. Hills and bush have a screening effect, and should be taken into account by the constructor, and if he finds that the output from one valve is not sufficient, he should not be too ready to blame either the circuit or the valve.

The Direction of the Aerial.

ANOTHER very important factor to be borne in mind by the constructor is his aerial. The output from a crystal is not particularly great, and everything has to be taken into consideration in order that he may get satisfactory loudspeaker strength from his amplifier. Not the least among these is the aerial.

Screeds have been written about this important part of the receiving apparatus, and reiteration here is both unnecessary and uncalled-for. Reference can be made to articles that have ap-

view by everyone erecting an aerial to receive from one station only, and crystal reception from any other but the local station is not worth while, even with an amplifier.

The Lay-Out.

MANY young constructors with a business-like eye and a business-like method of construction, search through, and find out "many different circuits" of crystal sets and amplifiers, to turn down several as "no good." This is a fatal mistake, as there is really no difference between crystal circuits. Some are more selective than others, perhaps, but selectivity should not be the aim of the crystal user in New Zealand.

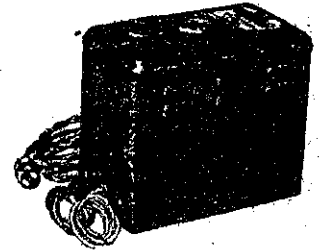
In most cases, especially where an amplifier is being used, the trouble is caused through defects in the lay-out. There are several important points to watch in this respect, and the constructor should, where possible, follow the lay-out diagram which almost invariably follows the theoretical diagram of the set which he is to construct. In some cases, alteration is essential, and in altering, the following points should be borne in mind:

1. Keep the wires going to the grid of the valve, short; insulate them well; and keep them off the base-board.
2. The plate wires are to be kept well away from the grid wires, likewise well insulated, and clear of any conductor.
3. Filament wires, and battery leads, may be bunched. Do not leave them straggling about the set as one sees in so many home-constructed jobs. This is not only unsightly, but is very liable to cause short-circuiting.
4. Keep your components well-grouped together, and many of the troubles enumerated above will not be encountered. Besides the set is given a neat and business-like appearance.
5. Do not let the coil get into contact or into proximity with either the condenser, the crystal, or the wooden base. It should be well insulated, otherwise the operator will find that his volume is sadly reduced.

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Short-wave Jottings

Mr. A. P. Morrison writes:

SO far this week two new short-wave stations have been heard by me—
a Dutch station, wave-length 16.88 metres, and a German station on approximately 41 metres.

Portuguese Station.

THE following items of interest to S.W. listeners are from the latest American "Radio News":—

Pioa, Lisbon, Portugal, is the call of a Portuguese experimental station broadcasting around 45 metres. Announcements before and after each number of the programme are made in Portuguese, Spanish, French, German, and English.

Eiffel Tower SW Station.

Eiffel Tower, Paris, is now conducting experimental transmissions on 31.1 metres in the mornings and afternoons.

A good many correspondents report in "Radio News" of hearing the Canadian SW station CJRX, Winnipeg, Manitoba. Probably this is the Canadian SW station heard by many New Zealand SW listeners. By its latest list of SW stations in the world given by "Radio News" their wavelength is given at 25.60 metres, power 2000 watts.

We read with interest in our papers this week of the record two-way communication between the Byrd expedition and "New York Times." Probably the Pittsburg station KDKA will go one better shortly, because while listening to RDKA a week or so ago I heard the announcer tell the Byrd expedition that if arrangements could be made they would try out an experiment with duplex telephony with them, but nothing definite was said, and I think this could be accomplished quite easily, because these duplex telephony tests carried out by PCLL, Holland, and ANE, Java, are wonderful. I think it is as easy for these Dutch people carrying out these tests as conversing over the ordinary telephone line; anyway, it will be interesting to listen into this experiment.

A thing that puzzles me is that in every list of SW stations published in different radio books, South Africa is stated to have a SW station call sign JB situated at Johannesburg, and I also have read in an English radio magazine where this station has been heard in England, and also two different SW fans heard this particular station, and then we read a report in "Radio Record" from a correspondent that there is no such station in South Africa, and has a letter to that effect, and this station started operating since that information was received.

My log for the week is as follows:—

Friday, January 25.

6.30 a.m.: 7LO was heard, but very weak. R5: The power of this station is not great, being only 4000 watts, so you cannot expect very much from that, although at times he is very good.

7 a.m.: 5SW, strength about R6. I have noticed lately some mornings he cannot be heard at all; no doubt as soon as the winter comes along he will

be heard with better strength on the morning transmissions with us.

7 p.m.: RSR, Germany, heard at good strength, R7 to 8, but mostly talk.

9 p.m.: PK2ME Sydney was testing duplex telephony with VPD Suva. Strength was very good, R8.

9.10 p.m.: VPD Suva was on 16.9 metres, R8 to 9.

9.30 p.m.: RFM Russia was at R8, talking. As usual an item of music now and again.

10 p.m.: ANE Java was heard playing records at R8. No sign was heard of PCLL.

Saturday, January 26.

4 p.m.: PCJ Holland, with his usual Australian and New Zealand programme. Different ones were called. Mr. Sellens was mentioned. Strength was R8, but increased to R7, and then faded out to about R5 before closing down.

9 p.m.: RFM Russia, strength R8.

12 p.m.: The mysterious 41 metres and 52 metres station I have reported before. I believe one to be a Russian and the other German.

Before closing down, the station I reported on 14 metres last week was heard again, much stronger this time, but still a little weak to get his call sign.

Sunday, January 27.

3 p.m.: W2XAF. His carrier wave was just audible; did not listen for him again till 4 p.m., when he was about R6. He increased to R7 before closing down. He signed off at 12.5 a.m., his time, and stated before signing off he would be on the air again at 10.30 a.m. to broadcast a religious service.

4.15 p.m.: KDKA was heard, but was too weak to bother about.

RFM was heard in the evening with a little music.

8 p.m.: American station heard on 30 metres, and again on 52 metres, testing. He was at good strength, R7 to 8, but modulation was not at its best, and I believe it was WLW. I notice by "Radio News" that the 3XN Whippany, New Jersey, short-wave station, has its equipment transferred to WLW Cincinnati (this station was heard by me but once), so probably we may hear more of this station now, because before it was only for experimental purposes.

Monday, January 28.

7 a.m.: 3LO Melbourne, usually 32 metres, but he gave his wavelength as 31.6 metres this morning. Chimes were heard from the studio, 5 a.m., Melbourne time, afterwards music. All items strength R8.

9 p.m.: RFM Russia, R6, much weaker than usual.

9.15 p.m.: A new Dutch station was heard on 16.88 metres. One of the finest receptions I have heard from Holland. A lot that was said was understood. He stated transmission would be Mondays and Thursdays. He asked for reports on transmission re strength and modulation. One item of music was "My Blue Heaven." The transmission was absolutely perfect, and his strength was R9 right throughout, and he was still going when I

closed down at 11 p.m. Probably in my next week's notes I will have the call-sign of this station.

Tuesday, January 29.

No short-wave stations were heard in the morning.

8.30 p.m.: A German station was heard on 37.55 metres. An item of music was heard. He would talk for 15 minutes, and then there would be an interval of ten minutes, when he would talk again. His call sign was heard a good many times as experimental station DOR N. in Germany. For some time he was speaking of Russia, and also mentioned about a short-wave station in Germany being heard all over the world. His signal strength was very strong for the first hour or so, but faded out from R9 to R3 at 10.30 p.m.

Wednesday, January 30.

6.30 a.m.: 7LO heard with records, strength was a little better than usual. R6. No sign of 5SW, Chelmsford.

7.15 a.m.: PCLL, 37 metres, was heard at great strength, R9, with music, some items heard were "Rose Marie," "Stars and Stripes," "Gems from 'No, No, Nanette,'" and many others. His programme continued to very late, still going after 10.30 p.m.

Mr. Sellens told me over the telephone last night that PK and ME, Sydney, carried out a duplex telephony with a German station, this test I did not hear because of listening to PCLL, the German station was heard on 26 metres, I believe.

9.45: PK2ME was heard on a duplex test with ANE, Java, both stations were at good strength, but ANE was fading a little, R8.

11.30: The German station as reported before was heard again on 41 metres. DOR, Nauen, Germany, was given many times; strength was R7.

ANE, Java, was heard calling PCLL, after completing their test with 2ME, but I did not hear PCLL reply.

Thursday, January 31.

7 a.m.: The carrier of 5SW could be heard, but nothing else was heard from him.

I forgot to mention, on Wednesday morning, at 6.44 a.m., a carrier was heard on W2XAD's old wavelength, but I am not sure if it was W2XAD or not. Since he changed his wave I have never heard him. Would some s.w. "fan" report if he has been heard on his new wavelength?

Did not listen-in in the evening.

Short Wave Reception

READERS perhaps have little idea of the radio sport that is gradually coming to them down on the shorter waves. Up to the present there has been so little to listen to, except Morse code, that a set seemed hardly worth while. But now very many stations are broadcasting on short waves from North America, Chelmsford, England, Holland, and Australia; Germany is

just completing a powerful short wave station from which programmes will be broadcast to the whole world.

A particularly strong station is the one in Eindhoven, Holland, which puts on regular programmes for reception in distant parts of the British Empire. This station is more widely heard than any other short-wave station in the world, according to many reports.

Being able to get distant places like these usually makes one think of super-priced receivers of many valves totally out of the reach of the ordinary person. But thanks to the gift of short wave this is not the case. Short wave receivers need only cost one quarter of the ordinary broadcast receivers.

Tendency of Modern Receivers

AN unmistakable tendency in receiver manufacture in all parts of the world is a steady increase in the number of valves used. This was strikingly emphasised at the recent New York Wireless Exhibition, where it was found that the average number of valves in the receivers shown was seven. More than anything else the perfection of methods of operating receivers entirely from the electric light mains have contributed to this development, which will probably be found to be very beneficial.

When receivers were operated from batteries the conservation of current was necessary to avoid too frequent charging of batteries. Economy in the number of valves used was, therefore, encouraged. Since the modern receiver is operated entirely from the light mains, economy in current is no longer necessary, and no limit is placed on the number of valves employed.

Improved manufacturing methods have made possible the production of a six-valve set for less than was recently charged for a three-valve set. A wide market is therefore assured for the larger receivers.

It cannot be overlooked that much of the distortion in receivers in the past has resulted from the overloading of valves in an effort to effect economy. Besides being extremely sensitive, the larger receivers now being used will therefore give far better reproduction than the smaller ones which they appear to be replacing.

VIENNA is now in direct radio connection with 17 States, and is fitted with six radio transmitters and 17 receivers of the most modern type.

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