

THE RADIO RECORD

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WELLINGTON, FRIDAY, AUGUST 31, 1928.

Keen Interest in 1YA Mystery Night

UNQUESTIONABLY the "Mystery Night" of August 29 will be a red-letter programme for station 1YA. Listeners throughout the whole Dominion as well as the full strength of the local crystal force will be tuned in, and it is by no means impossible that the winner of the handsome £50 gramophone will come from a distant corner of the Dominion. That is one of the marvels of radio—that on such an occasion as this, distance, practically speaking, plays no part and the most distant is on a parity with those close at hand.

THE night in itself is one of the first fruits of the committee system inaugurated by the Company. Immediately on the formation of the Musical and Dramatic Committee in association with 1YA the idea of such a mystery night was brought forward and, after full discussion, recommended to the company for adoption. The committee has produced a number of other ideas for the brighten-

ing of programmes and the provision of that elusive quality of "variety" which is so much in demand. These other novelties will be produced in due course.

THE task of judging the entries for the "Mystery Night" will be undertaken by the Musical and Dramatic Committee itself, so that it will have the closest possible contact with the outcome of its own suggestion. The personnel of the Committee is illustrated below. To their work on behalf of programme variety broadcasting is likely to owe much.



1YA MUSICAL AND DRAMATIC COMMITTEE.

Back row (left to right)—Mr. C. B. Plummer (Choral Society), Mr. J. F. Montague (Auckland Comedy Players), Mr. V. Trask (Athenian Club), Mr. L. E. Lambert (Bohemian Orchestra).
Front row (left to right)—Madame Irene Ainsley (Ainsley Operatic Society), Mr. Karl Atkinson, chairman (Auckland Gramophone Society), Dr. Kenneth Phillips (Society of Musicians).
Absent.—Mr. N. McRobie (Royal Male Choir), Mr. G. T. Lee (Aeolian Orchestra), Mr. F. E. McCallum (Little Theatre Society).

A DOZEN or more broadcast stations in America are already transmitting programmes on short waves.

CHARITY appeals are regular features of the B.B.C. stations. £5000 was recently subscribed by this means.

FIRST class American artists are said to receive from £200 to £400 for a single studio appearance, while one jazz orchestra was booked for £300 an hour.

A RUMOUR (as yet unconfirmed) is current in England that at 8.45 p.m. on Sundays, Aberdeen station closes down for five minutes. One wonders if this is the time for the weekly appeal.

THE ceremony of changing the guard was twice broadcast during 1926 with the approval of H.M. the King. His Majesty sent an order for the band to continue playing beyond the regulation time, thus giving additional pleasure to millions of his subjects throughout the Kingdom.

JAPAN is not alone in arranging language courses over the air. Regular lectures are given from Daventry, England, in Modern Languages. Simple selections in these languages are published in "World-Radio," and the lecturer during the lecture reads them over, thus aiding pronunciation.

RADIO certainly permits you to hear musical curiosities which ordinarily would not be stumbled across in a lifetime. A rather unusual soloist has been featured from an American broad-

Radio Round the World

cast station—a bass violin has gone on the air. There is not more than a handful of players who have mastered this ponderous instrument to the point of virtuosity.

THE description of a hand of bridge was recently broadcast in England.

MEXICO possesses some twenty broadcasting stations, nine of them being in Mexico City. Of these the most powerful is CYT, which works on 2 k.w.

IN Germany the technical executive and plant are provided by the Post Office, while the stations are grouped by regions under the control of regional programme companies under central organisation.

THE bed of the Thames near the Country Hall, Westminster, was described to listeners as a diver saw it one evening in July, 1926. He carried a small microphone in his helmet as he moved about under the water.

THE Italian broadcasting system is that of unified control through private ownership, the tendency being for greater governmental influence. It is intended to maintain the service out of ordinary taxation instead of listeners' license fees.

A DESCRIPTION was recently broadcast of the strange ritual ceremony of an African native tribe.

A THACKERAY anniversary programme recently put on the air from Daventry included dramatic episodes from "Vanity Fair."

WITH an estimated total of seven million radio sets in U.S.A., three out of every four homes are yet to be equipped.

MUSIC constitutes 80 per cent. of the programmes broadcast by the Cape Town station, talks being limited to three-quarters of an hour a day.

A RECENT offer of shares in the Baird Television business resulted in an early over-subscription. The investing public is a highly-courageous body, sometimes too eager for new fields.

A PROMINENT whaling and sealing company, after two seasons' experience of radio telephone sets are so pleased with the results that they intend to extend considerably their equipment for the new season.

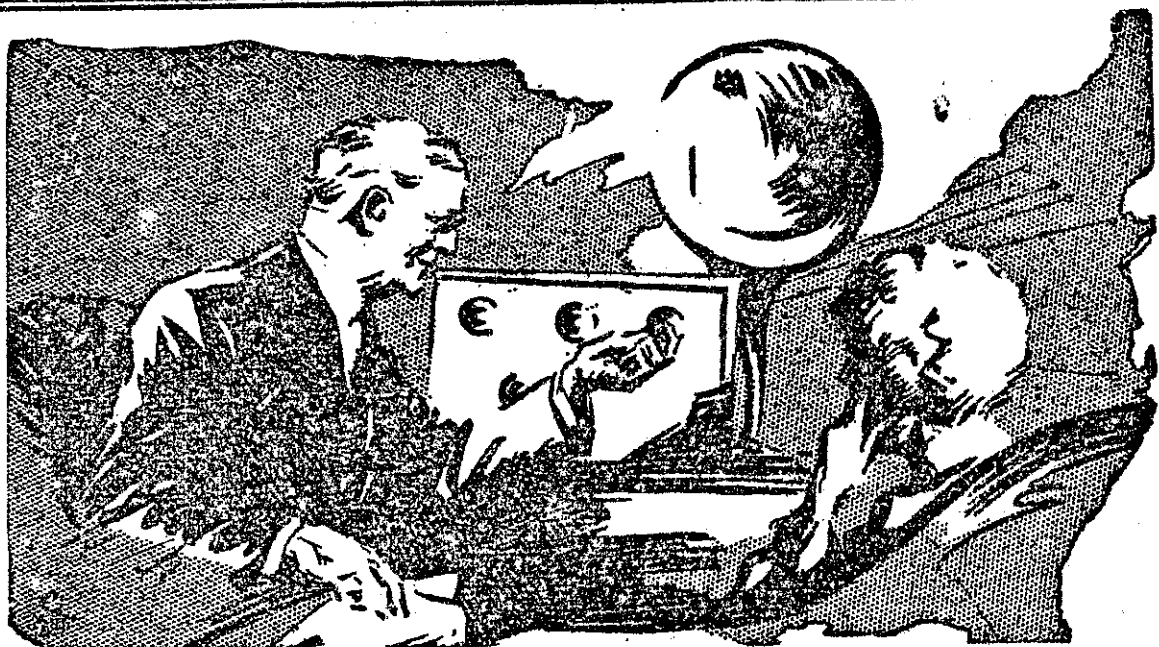
FOR the benefit of the ever-increasing number of short-wave enthusiasts the London programmes as radiated from 5SW Chelmsford, are being commenced an hour earlier. 5S.W. should now be heard at 5.30 a.m., New Zealand time.

UNDER the auspices of the German Ministry of Education, a "radio school" has been established at Jena, in connection with the university. It will broadcast systematic instruction in mathematics, chemistry, physics and modern languages.

IT is reported that about 150 stations have applied for picture transmission apparatus. As far as results are concerned fairly good pictures have been received with amateur apparatus, up to distances of 700 miles, although it is readily admitted by those interested, that the transmission of pictures is essentially a short range proposition.

RADIO and the aeroplane play important roles in the protection of Canada's vast forest wealth. The aeroplane, soaring high above the lake-studded forest regions north of Lake Superior, spots the smoke that tells of the fire. The signals from the short-wave radio sets flash the news from post to post, and summon by aeroplane, railway, and canoe the fire fighters and their machinery.

THE first national school radio-telegraphy in Europe has been established by the Belgian Government for the purpose of training technicians and operators for the civil service, both in Europe and in the Congo, as well as officers and non-commissioned officers of the army, and aviators. It was authorised by a law recently passed; and is to be administered under the joint control of all the ministries whose work is affected; railways, marine, posts and telegraphs, and national defence.



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- 1 Cannonball Loud Speaker.

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THE fire department of Prague (Czecho-Slovakia) is equipped with radio receiving sets and portable transmitters. These are carried by the apparatus and make possible communication with headquarters while detachments are in attendance at a fire.

PASSENGER - CARRYING aeroplanes, now fully equipped with radio, have call letters identical with their registration number. These are five lettered, the first one, or in some cases the first two, indicate the nationality. Most of the 'planes use long wave, varying from 600 to 1550 metres. With the exception of French navy balloons, all the 'planes use continuous wave transmission or telephony. These few dirigibles use spark.

GREAT Britain now grants licenses for radio receivers free of charge to those who are blind. It is necessary for the applicant to register with his or her local council, which issues a certificate. On presenting this at the local post office, a listener's license is issued free of the usual ten-shilling tax.

VARIOUS fake "dopes" and patented mixtures which are alleged to "charge storage batteries, reduce internal resistance, remove sulphation, prevent freezing," have been found by the United States Better Business Bureau to be ineffective. The outstanding battery "dope" coming to the bureau's attention during the past year was composed essentially of corn starch!

DURING the recent flight of the Southern Cross from San Francisco to Brisbane, Mr. J. Warner, the radio operator, found that the main difficulty was that of providing sufficient battery current to operate the receiver over the long periods it was on the air. Although the ignition system on the motors of the plane was not screened, very little trouble was experienced from this source of interference. The chief obstacle in the way of the radio operator was the noise of the three powerful engines, which made all but the loudest signals unreadable even when the 'phones were held closely against the ears. The aerial for the transmitter consisted of a coil of copper wire which was unreel when the plane took the air.

WEATHER maps by radio are among the latest development of science. The system consists of a photo electric transmission from two land stations and pen and ink reception aboard ships. The morning weather reports are collected by the weather bureau and a weather map drawn by hand in ink on an 8 x 10-inch base sheet, printed in black on white paper. Of this map a photographic negative is made. The map with its black background and its clear white lines acts as an interrupting shutter between the point of light and a light sensitive cell. The result is a series of electric current pulses as the lines of the map pass the cell opening. These pulses amplified, operate a fast relay, the secondary of which controls the output of the broadcasting station. The essentials of the receiving instrument consist in a rotating cylinder of bakelite, around which is wrapped a printed base map. A pen box is connected so as to be influenced by incoming signals. The cylinder is set in move-

ment by an impulse caused by the starting up of the cylinder at the transmitting end. After a little adjustment the machine automatically takes care of itself, reproducing faithfully the map transmitted. The whole operation takes about eleven minutes. A simple attachment to the receiver converts it into a transmitter (as well as a receiver) of pencil sketches, handwriting, etc., drawn with ordinary lead pencil or with special ink. As a machine weighs about twenty-five pounds this attachment makes itself useful in transmitting back to headquarters, maps made by an observer aboard an airship as she moves along. It is believed that the system will ultimately be found very useful in many lines of communication.

WHICH give the best tone—headphones or loudspeakers? All things being equal, headphones are superior in tonal qualities, as one or two possible sources of distortion in a loudspeaker are absent in headphones. Still, a really high-class loudspeaker when properly used is not far short of the best headphones.

IF your accumulator case is provided with a carrying strap be very careful that none of the liquid from the accumulator gets into contact with this, as the effect will be to "rot" the strap which may then break suddenly and let the accumulator fall, possibly with disastrous results to the carpet.

IN laying out a bakelite or highly polished hardwood, a piece of paper

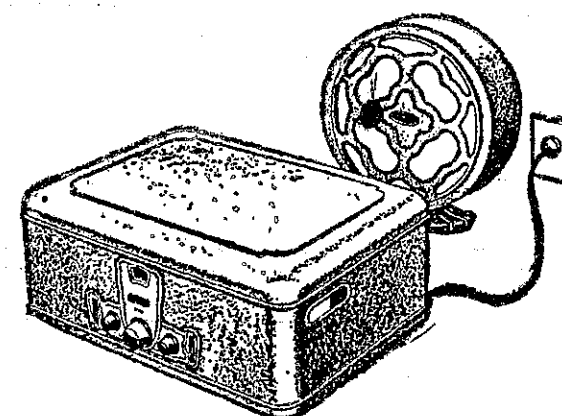
pasted over the entire surface will allow of as much figuring and lay-out guide lines as required. When it has been finally decided where each hole is to be made use a fine punch and a light hammer to make a slight impression. This will serve as a start for the twist drill. Finally soak the paper from the panel and an unscratched surface will remain.

Correction.

IN a reply to "T.P.," Island Bay, in the issue of August 17, it was stated that the trouble was caused by having two audio valves and a detector. This should read two radio or high frequency valves and a detector.

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Early Radio in New Zealand



MY FIRST introduction to wireless was at the Wellington Commercial Station "VLW," in 1912. The plant consisted of a 2½-K.W. Telefunken transmitter, with a quench spark gap, which produces a high pitch note that is easily read through atmospheric disturbances. The receiver was a loose coupled Telefunken, using perikon detectors (Zincite and Bornite). This type of detector, although stable, was not nearly so sensitive as other crystals such as galena, silicon, and several of the pirites species. Some really remarkable distances were worked from the various New Zealand stations using galena as a detector, the best achievement being the picking up of Perth (VIP) and Broome (VIB); testing on 1100 metres. The Moana, which was subsequently wrecked, was worked when 1100 miles out from New Zealand, bound for San Francisco; although her transmitting apparatus consisted of a 1½ K.W. slam spark Marconi set.

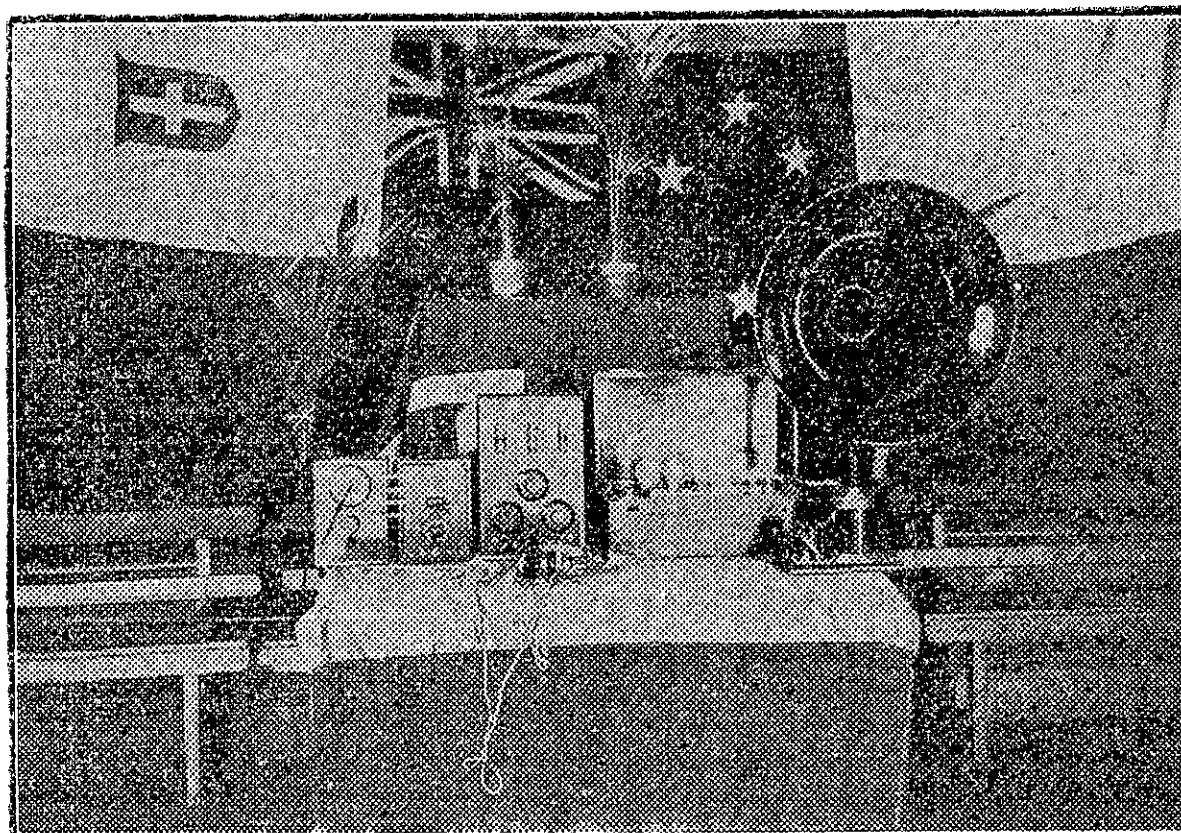
AFTER spending some three years at VLW, my next experience of wireless was with the 1st New Zealand Wireless Troop in Mesopotamia. The troop, together with the Australian Wireless Squadron, took over the lines of communication from the Royal Engineers. These two units were subsequently united, and called the Anzac Wireless Squadron, and maintained the lines of communication throughout the Mesopotamian campaign. We saw many places of interest, and had some rather unique experiences, but I must confine my article to wireless. Two types of sets were used—waggon and pack horse (Marconi portable). These sets were very efficient, and withal very solidly built. Signor Marconi must have had Western Australian half-draught horses in mind when he de-

Interesting and Entertaining Reminiscences

Radio broadcasting has had a very interesting history, brief though it has been. The pioneers in radio telephony were great enthusiasts, and one of the first was Mr. Clive Drummond, announcer at 2YA. His enthusiasm for broadcasting has increased as his association with it has extended. It was by special request that he has been induced to record his reminiscences, and the appended interesting and entertaining story is from his facile pen.

signed these types of sets, as it was from these horses that the solidness of the sets was most frequently tested. For the pack sets, the motor was arranged on a saddle which fitted on the horse's back, the armature of

course, being first removed. The danger of damage to the set and to the soldier was in the placing of this motor saddle on to the horse's back; one false touch on the rump or flank during this operation, and look out.



The 15-Watt Transmitter used in connection with the early broadcasts of dance music in Wellington.

shee had another pet aversion, and that was having the strap of a nose-bag placed over his ears. Once his nose got into the bag you had about a fiftieth of a second left to complete the operation. Buckshee should have been a linguist; he taught me to swear in several languages, though I left it to the Aussies to cast reflections on his parentage. I was very glad to see the last of Buckshee.

Still, with all their objections to being tickled, they were the horses to get you there, when the order was long treks and little water.

IN 1921 I became associated with the Petal Telephone Company. Mr. A. J. A. McClay was the operator of their 15-watt set, situated at Gordon Place, Newtown. This was also an experimental station, and the first telephone heard in New Zealand was picked up here on a receiver, built by Messrs. McClay, Haggett, Apperly and Simpson, the pioneers of radio in Wellington.

Some very interesting experiments were carried out from this 15-watt, and demonstrations with varying degrees of success. One of the most interesting and successful was the providing of some of the dance music by wireless telephony for the Post and Telegraph Engineers' Social and Sports Club dance which was held in the New Century Hall, Kent Terrace, on August 11, 1922. All the instruments used, including the transmitter, were constructed by the gentlemen previously mentioned, and as a sample of fine workmanship the transmitter particularly was notable.

At the New Century Hall was a three-stage amplifier. The received waves amplified by this set were passed to a three-stage bower magnavo amplifier, and from that to a magnavo, from which they were emitted into the dance hall with great power. As the hall is right on a tramline, and as a tramcar is amazingly efficient as a generator of etheric disturbances at short distances, there was a good deal of disturbance, and the wireless programme was found less satisfactory than was hoped. The large gathering was none the less pleased and impressed, and it thoroughly enjoyed the terrific uproar which was caused at 9 p.m. when VLW burst in with its nightly weather report. With so much amplification the noise was almost deafening.

WIRELESS in those days had its humorous side, particularly for the broadcaster, due possibly to poor modulation, or was it enunciation?

The following is a case in point:—A gramophone selection had been announced (a fox-trot entitled "Georgia") played by Paul Whiteman and his orchestra. Some little time after the record was finished a lady telephoned to say how much she had enjoyed the dance number "Georgia," and added, "Would you please give us some more items by four white men up in Auckland."

During the broadcasting of the election results in 1922, opportunity was taken during the early evening when returns were slow in coming to hand, to give a brief description of the provisions made by the Government to enable people to record their votes.

These horses could kick the eye of the proverbial needle, or for that matter of anything else that happened to be within range.

AFTER such an equestrian demonstration it was usually necessary to hunt for the various parts of the set, which had been scattered over the desert during his mad peregrinations.

SPEAKING of horses reminds me of my old friend "Buckshee." He was a wanderer and they took him in; after that, he did the taking in. I wondered at first why such a good-looking horse should be hanging round loose; I soon found out. Buckshee was "Puggle." He was a quiet horse—except when the moon was nearing the full. But he was a sport, every inch of him; he fought fair. It was the Marquis of Queensberry with his front legs, La Savate with his hind-quarters, catch-as-catch-can with his teeth, and jiu-jitsu all over. The trouble was that he used all styles together in the opening round. It took seven men to put a ring on Buckshee—firstly the fool who tried to do it single-handed, then two stretcher-bearers to carry the said fool to "dock"; then a reinforcement with a motor driver to bring him up from the base—after that two more men were required actually to do the job. Buck-

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Among other things it was pointed out how "booths" had been arranged in every part of the city for the convenience of the people. Next morning it was pointed out to me how shameful it was, on such an important occasion as the election, when a referendum on the liquor question was being taken, for the Government to have "boose" in places so easily accessible to the public. Evidently the Federal microphones used in those days did not handle the "dips" too satisfactorily.

IN 1923 The Dominion Radio Company started operations, broadcasting from a transmitter embodying the Hartley circuit, using Z3 Philips tubes. A motor generator driven off the city supply delivered 2000 volts to the plates, type, using large hoops. All this was The antenna was of the circular cage situated on the roof of the Wellington Publishing Company's ("Dominion") building, Lambton Quay, the studio being on the ground floor. A regular service was maintained by this company, broadcasting concert programmes four nights a week, including Sundays. Many artists and listeners will remember 2YK under the regime of the Dominion Radio Company, for it was from this station that numbers of artists heard on the air to-day made their debut to Radioland.

Many demonstrations were given (by way of experiment) from this station, with more or less success. I will briefly mention two. For the first, James Smith's Drapery Emporium, on the corner of Cuba and Manners Streets, was selected. A receiving set had been

see what the noise was all about, grew to such an extent that all traffic was held up. The police eventually took a hand in the matter, and ordered us to stop, so "Imshi" the wireless for that night.

From this station 2YA I had the pleasure of broadcasting the results of the 1925 elections, when Reform was returned with such an overwhelming majority. The station was on the air from 7 p.m. until midnight. The Prime Minister (the Hon. J. G. Coates) called (with a suite of officials) at the Strand at 11.45 and spoke to and thanked the people from the microphone at 2YK.

THE other occasion of which I spoke and which met with a greater measure of success was when some hundreds of Wellingtonians enjoyed a moonlight excursion round the harbour on the ferry steamer Duchess. Selected gramophone dance numbers were broadcast during the evening and picked up on a specially-fitted-up receiver on the Duchess. Full advantage was taken of the dance music not only by the excursionists, but by the frequenters of the beach at Petone, Day's and Rona Bays, at which calls were made.

Another successful broadcast from 2YK was that of the final Test match, All Blacks v. England, played at Twickenham. Special arrangements had been made to have the results on the cable at London, and likewise in New Zealand. The information was to be available immediately it reached the Pacific cable office in Auckland. It was announced

eral flights of stairs, three at a time, was a sight for the gods. He had the station on the air in a trice. I had barely time to get from the studio where I got his O.K. down by 'phone, when the news from Auckland came: "11—17." Nothing more.

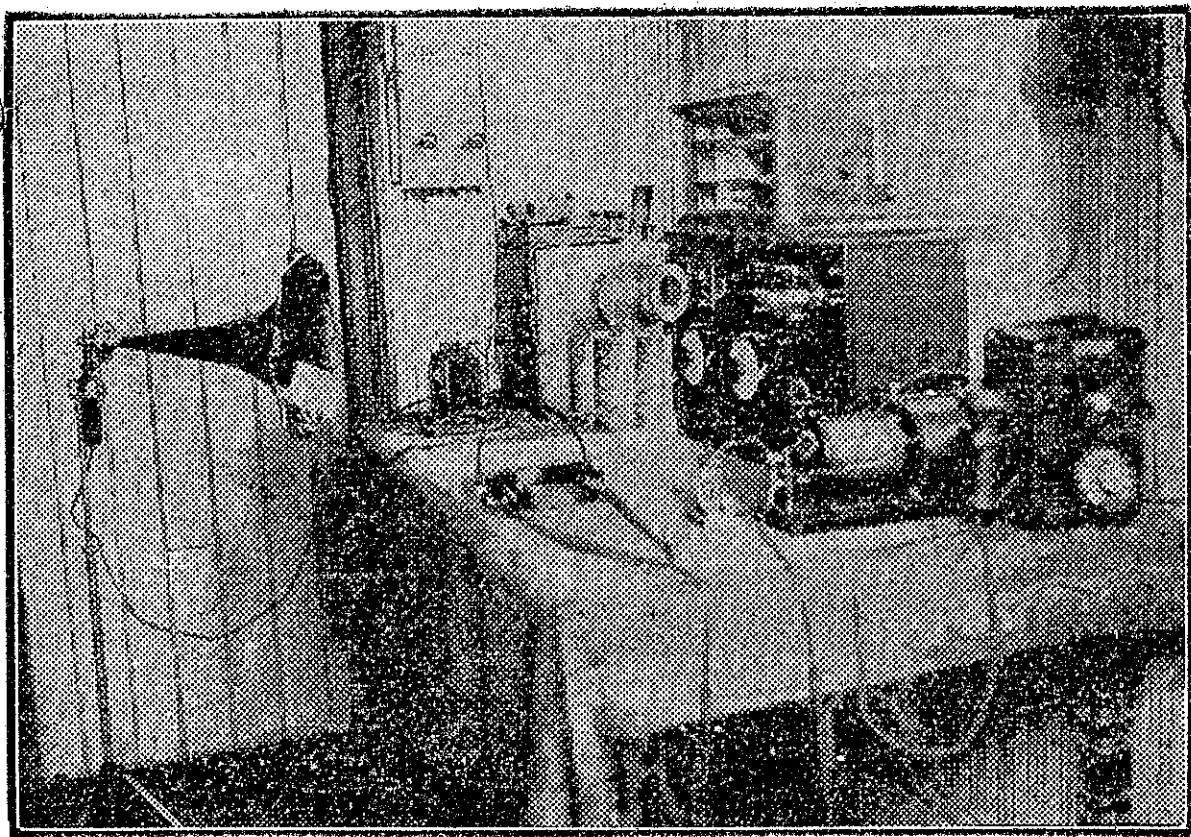
I did not stop to consider the possibility of which way the fortunes of the game had gone, but flew to the "mike" and shouted, "New Zealand 17, England 11." The time was 2.44 a.m. This, I understand, established a world's record for quick communication, the result being broadcast in New Zealand just 2½ minutes after the sounding of the bell at call of time in England. Many listeners referred to us as radio enthusiasts of the first water, and greatly appreciated getting the news so promptly, but others again placed us in quite a different category.

During the next few days the company received over sixty letters from listeners, who wrote me to say they had received the result during the early morning session, so you see we did not have it on our own after all. The result was broadcast intermittently until 4.30 a.m., and again at 10 a.m. By this time we were both tired, but happy in the thought that we had been able to broadcast such wonderful news.

Even in these days, in spite of the fact that all the artists performed without fees, the expense of maintaining a broadcast service was con-

siderable. The various traders in Wellington, realising this, and that they were participants with the Dominion Radio Company in benefits derived from the incentive to purchase sets, caused by the broadcast service, contributed monthly payments to the Dominion Radio Company. The broadcasting service was then known as the Wellington Broadcasters. It is interesting to note, and shows the keen practical interest taken in radio by the people of Wellington, that for one or two years they placed their time and talent at the disposal of the company gratuitously, and it was only through sickness or other unavoidable circumstances that engagements were not carried out to the letter.

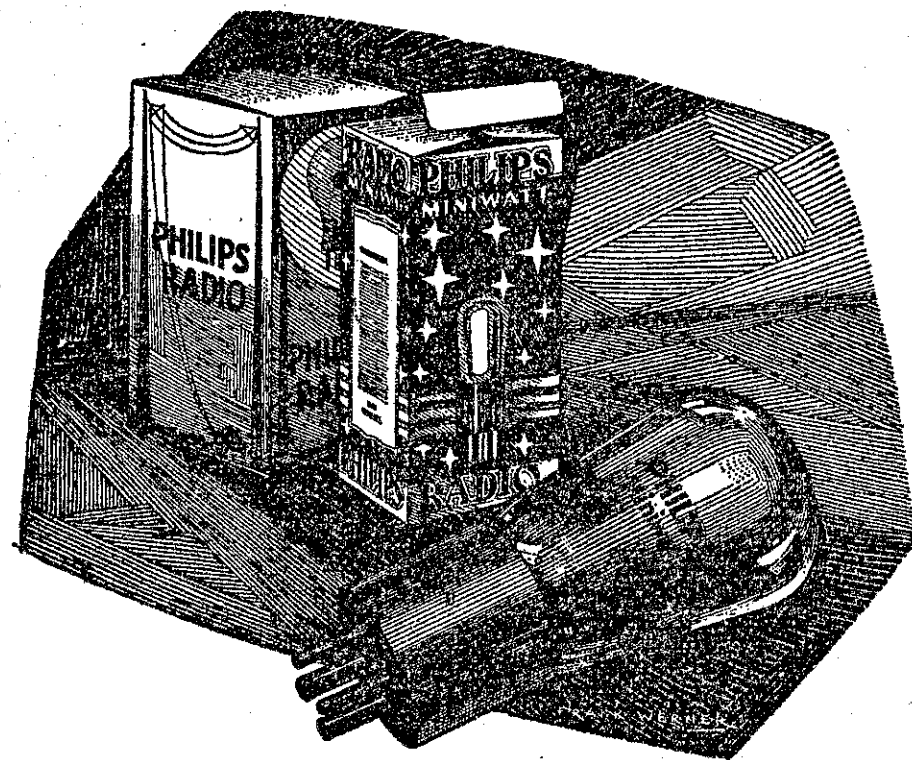
The Radio Company went into voluntary liquidation about the end of October, 1926, and during the time until the N.Z.R.B.Co. commenced operations on December 22, 1926, the service was maintained by the P. and T. Department, Mr. Joe Carr acting as programme organiser. The N.Z.B.Co. had their studios in the Dominion Farmers' Institute Buildings, although the transmitter was still at the "Dominion" Newspaper Buildings. Considerable improvement was evidenced in the transmission at this time, due to the fact that Western Electric Microphones and speech in-put equipment was introduced. 2YK carried on until 2YA opened on July 16, 1927.



The single-circuit receiver used for the P. and T. Engineers' Ball in the New Century Hall, August 11, 1922.

installed on the roof, and a loudspeaker lowered over the parapet until it came to rest on the roof of the veranda. The concert started, and the first item was supposed to be a trombone solo. It might have been, but you could not blame the people from questioning this, judging from the weird and wonderful noises emitted from that loudspeaker. A trombone solo was hardly a happy selection of an item for demonstration purposes, for the noise reproduced, together with the almost continuous tram tra' passing over the points can better be imagined than described. This was taking place on Wellington's long night (Friday) and the crowds of interested (curious) people, congregated to

that the result would be received about 3 a.m. on Sunday. Mr. H. R. Jacques, then manager of the Dominion Radio Company, was associated with me in this stunt, being my guest for the Saturday night. We were astir soon after 2 a.m., and after partaking of a "seagull's breakfast," set out for town, on foot, as of course there were no cars at that hour of the morning. We arrived at the station at 2.40 a.m., and to be on the safe side rang to see if the special trunk line to the cable station was O.K. The reply electrified us both. "Stand by, result just being recorded." Mr. Jacques is 6 feet tall with long legs, and he needed them. To see the way he negotiated those sev-



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The New Zealand

Radio Record

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WELLINGTON, FRIDAY, AUGUST 31, 1928.

EDITORIAL NOTES.

LETTERS from several correspondents show that in some circles of listeners the announcement made from 2YA on a recent Sunday evening that certain items were not available for broadcasting has been completely misunderstood. These letters show that the listeners have thought the items were of such a nature as not to be fit for broadcasting on a Sunday evening. That is not so, and no question of the merit of the item is involved. The position simply is that at the public concert in question certain professional artists associated with an entertainment company appeared, and a condition of their appearance at the concert was that they should not be broadcast, it apparently being considered that the broadcasting of their voices would affect their drawing power to the entertainment with which they are associated. This explanation is made as a matter of justice, as several correspondents have rather blamed the company for the excision and have "spread themselves" in verbal ingenuity condemnatory of this so-called wowservistic action. The company had no option in the matter, and did the only thing possible by filling in the time with items from the studio.

TRULY is the way of the politician hard. Living by votes, every public action must be viewed in the light of vote reaction. No other explanation covers the conduct of Mr. Howard in relation to the ban on racing, but it is questionable whether, in his desire to ride the winner, he has backed the right horse. His support of the Racing Conference in its refusal to extend to broadcasting interests the same facilities for gathering and publishing news as is accorded the Press, is not likely to win the support of his sport-loving constituents, nor does it accord with a due regard for the rights of a democracy to prompt news of items of interest. If Mr. Howard is concerned to appreciate the interest of "the people" in sport and desires to protect their interest he will amend his attitude and not back an oppressive monopolistic attitude. Why did Mr. Howard desert democracy on this point? Where does he stand?

WE have already dealt so fully with the unwarranted ban placed upon the rights of the people to equal privileges from broadcasting as are accorded the Press, that we are diffident about devoting more space to the matter. We cannot miss the opportunity, however, of directing attention to the letter of a correspondent, published in another column, which deals with some important aspects of this matter. The correspondent points out the manner in which the public support racing, and cites details to show the substantial aid given by Parliament to the cause of racing in the last few years. Concessions amounting to £100,000 per annum have been conceded by Parliament. The largest individual item is one which comes from the pockets of the public. This is the matter of "totalisator fractions." Amounting to between £35,000 and £40,000, this sum, formerly appropriated for a term by the Government, is now handed over to the racing clubs themselves. Yet in spite of this and other windfalls enumerated, the cause of racing is so hard pushed (they would have us believe) that it is a matter of moment to them to endeavour to force a few shillings from the pockets of listeners for the privilege of receiving from the air news which is handed freely to the Press. The right of the public to a free Press has long been established. The Press, to its credit, has always fought solidly for the untrammelled right to publish news at the earliest moment. The

policy of suppression adopted by the Racing interests is utterly opposed to the welfare of the public, and will never win public approval. Resentment is strong against it, of that the authorities may be assured.

Further Complaint about the Racing Ban

How much do the Clubs want?

I WAS pleased to see in last week's issue the statement of one writer that he refused to attend the Christchurch meeting because of the narrow attitude of the racing people in banning broadcasting. I feel the same way myself and I know the resentment of the people is very widespread and general. The only consolation is that the Broadcasting Company has had the courage to defy the ban and make arrangements for securing the news to which all listeners are entitled.

It is now suggested that the racing people want to bleed the listeners through the Broadcasting Company of money for a service that is given to their friends of the Press freely. As it is the public which maintains racing I think it is time, in view of this attitude of the racing people, to examine the position and see the extent of the concessions and privileges which are given by the public through the Government to racing. According to a recent speech by the Minister of Finance the concessions given to racing in the last few years alone total over £100,000 a year. This sum is made up of between £35,000 and £40,000 conceded to the clubs in respect of unpaid fractions of dividends. Practically £26,000 of the Government's share of the totalisator tax was rebated to permit of ground improvements. Further, the clubs benefited by the abolition of income tax on land. The stakes duty was reduced from 10 per cent. to 5 per cent., thus saving approximately £30,000 and a tax of 2½ per cent. on admissions (worth £6500) was repealed last year. And of course the clubs retain all unclaimed dividend money.

SO the public have given the racing people £100,000 annually and yet they have the nerve now to suggest that the listener should pay for the news that is given freely to the newspaper press. Is there no limit to what the racing clubs want? Have they no regard for the public at all? Do they wish to bleed the public at every turn?

But I find the concessions to racing do not consist only of money. I believe it to be a fact that the very ground on which the races are held at Riccarton is a public reserve appropriated to the Canterbury Jockey Club

by a certain procedure. This public reserve, on which is now the Riccarton racecourse, was given by the Crown for racing purposes and the control vested in seven trustees. In 1907 there were three of the original trustees left—Sir George Clifford, Mr. G. G. Stead and Mr. B. L. Lane, all influential members of the Canterbury Jockey Club. These trustees leased the whole of this valuable property of 178 acres to the Canterbury Jockey Club for the modest sum of £20 per annum. One of the names mentioned appears on the lease on behalf of both lessee and lessor. The next step after this was to prosecute twenty people for allegedly trespassing on a public reserve and they actually succeeded in having them incarcerated in gaol for refusing to leave that public reserve. This action roused so much public comment that it was apparently desired to make the position absolutely safe, so there appeared from "somewhere" an Order-in-Council giving the trustees special permission to lease the land to the Canterbury Jockey Club!

The position therefore is, sir, that racing is the spoilt child of the New Zealand public. From the pockets of the public it is supported and from the purse of the community it receives preferential treatment, amounting in the last few years to no less than £100,000 a year on the authority of the Minister of Finance himself. Valuable public reserves have been appropriated to the benefit of racing, and now, not content with all these privileges at the hands of the public, it is coolly suggested that the fees of listeners should be raided as an extra perquisite for racing. That is the confession of the secretary of the Racing Conference. As you pointed out, sir, their concern for the morals of the community deceived no one and the candid reason was probably given when the secretary complained that their palm had not been crossed with silver!

I think the public should know these facts. The ordinary Press will not publish them, and as you are the only paper fighting for the rights of the public to receive from broadcasting the same privileges as are accorded the Press, I send the information to you.—I am, etc.,

NO HUMBUG.

Riccarton.

The Radio Depot

165 Manchester St., Christchurch.

E. G. SHIPLEY.

RADIO SPECIALIST.

Phone 4770.

S-O-S

TRAVEL IN COMFORT BY
CARWELLINGTON — PALMERSTON
NEW PLYMOUTH.

Use Our Booking Offices in Advance.

Crystal Control

Compliments for 2YA.

MANY favourable reports have been received regarding the improved reception of 2YA since the installation of crystal control. One of the most interesting comes from a listener not far from New Plymouth. He writes: "I am writing these few lines to you in reference to the crystal control which has just been installed. Well, it has made a wonderful improvement to the reception. The clearness of the station is beyond anything and very steady. I am operating a five-valve set, and have been a listener for just two years, and appreciate what the company are doing to improve reception for all listeners. There are several listeners in my locality who are nothing but growlers and finding fault all they can with 2YA. For myself I would not have anything to do with them and won't join the happy family. I had one of them out here two months ago listening to 2YA, and he went away thinking a great deal. That night's reception was perfect—not a fade or distortion of any sort. All they found fault with was the strength of 2YA compared with 1YA. There was no difference, but what has that to do with reception? I am quite satisfied, and good luck to the company."

THE Los Angeles station KFI, which has also just recently (subsequent to 2YA) installed crystal control, also reports that the change-over has had very satisfactory results. It is stated: "From the northern part of California, where reception of KFI has been almost impossible during the summer months, radio fans have wired that KFI is now coming in clearly and loudly without fading, which is an unusual record for this time of the year. DX fans on the east coast who were formerly able to barely hear KFI's carrier wave, are now able to bring in the station so that the voices and musical numbers are audible."

SENDING OF GIFTS

ABANDONMENT PROPOSED BY 3YA COMMITTEE

A MEETING of 3YA Children's Sessions Advisory Committee was held at the local studio of the Radio Broadcasting Company of New Zealand Ltd. on Monday afternoon at 4 p.m. There were present: Mr. D. E. Parton (Y.M.C.A.), in the chair, Mrs. Schenkel (Mothers' Union), Mrs. S. Parr (Mother Hubbard—3YA), Mrs. W. Machin (Y.W.C.A. and National Council of Women), Mrs. A. R. Hall (administrative staff), Miss Maynard Hall (children's sessions organiser), Rev F. Rule (Presbyterian orphanages), Major Ashworth (Boy Scouts' Association), Mr. H. M. Bannehr (St Saviour's orphanages), Mr. G. D. Dickson (Junior Internationals), Mr. A. J. McEldowney (Big Brother. 3YA), Mr. E. J. Bell (city librarian), Mr. A. C. Maxwell (Headmasters' Association), Mr. L. Slade (station manager. 3YA), Mr. Clyde Carr (Uncle Sam,

3YA), Mr. C. S. Booth (Chuckle, 3YA).

A letter was received from Mr. H. M. Bannehr tendering his resignation from the committee on account of his removal to the North Island. This was accepted with regret, the chairman conveying to Mr. Bannehr the good wishes of the committee. A letter was received from the Headmasters' Association nominating Mr. A. C. Maxwell as its representative in place of Mr. A. S. Clarke. Mr. Maxwell was welcomed to the committee, and signified his desire to do what he could to assist.

SUGGESTIONS contained in a letter from one of the company's honorary official listeners resident in Wellington were then considered. There was a lengthy discussion regarding the announcing of presents to children. It was finally decided to recommend to the company that no reference be made to the presents, owing to the disappointment experienced by the children not receiving presents, but that announcements of birthdays be continued.

A discussion regarding programmes followed, and a sub-committee was set up to review programmes weekly and report to each meeting of the full committee. It was decided also to recommend that a gramophone recital be included once each month, using special children's records, of which a very suitable selection is available. It was reported that Miss A. Warren had found it necessary to resign from her position as Aunt May, and a motion was passed expressing appreciation of her work.

Sporting

Saturday, September 1:

Auckland v. North Auckland—1YA.
Wellington v. Taranaki—2YA.
Club Rugby—3YA.
Payne Trophy—4YA.

Wednesday, September 5:

First Test, New South Wales v. New Zealand—2YA.

Saturday, September 8:

Auckland v. Wanganui—1YA.
Wellington v. Hawke's Bay—2YA.
Club Rugby—3YA.
Second Test, New South Wales v. New Zealand—4YA.

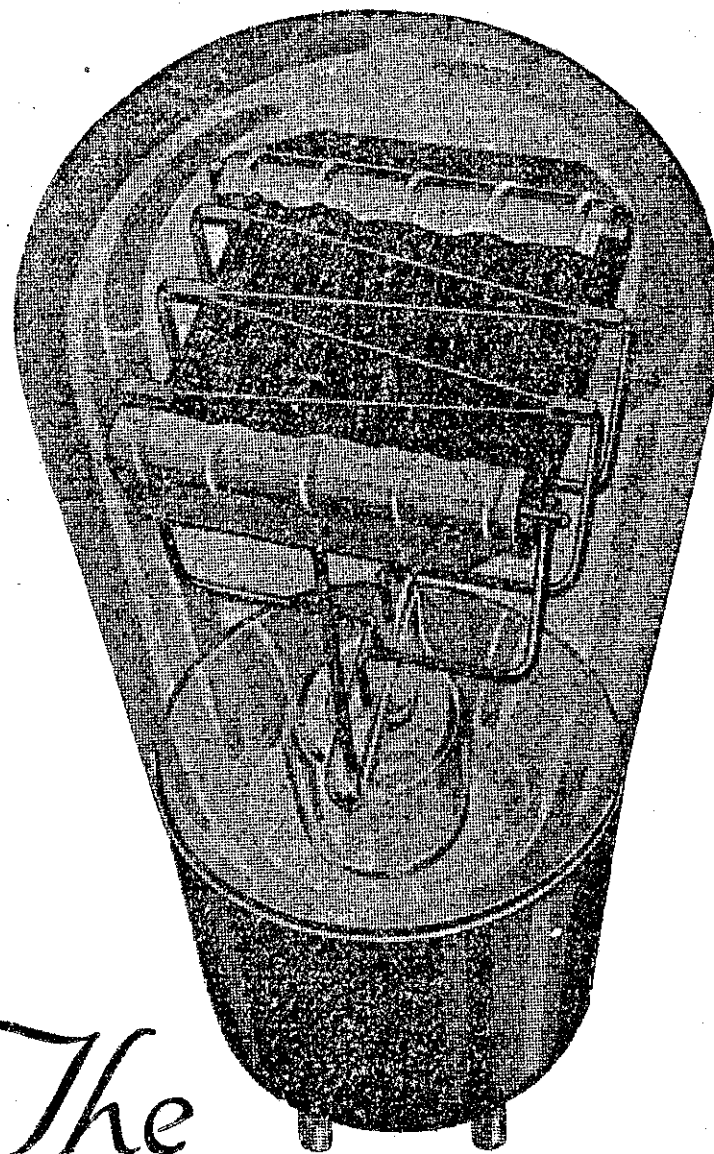
RADIO AND SPORT

CREATES NEW "FANS."

TEX RICKARD, the famous promoter, who not so long ago was rated as an opponent of broadcasting, has become converted. "I have found," he says, "that the radio has done more to create new fans for sporting events than any amount of advertising could possibly do." Unfortunately this opinion is not shared by all sporting authorities. But there is a mine of truth in what this great American promoter has said.

"WE like your programmes because they are varied and are not monotonous."—Extract from a letter from New South Wales to 2YA.

The All-British Valve—Mullard



The COST PER HOUR OF GOOD RADIO RECEPTION ♦ ♦ ♦

It all depends on the valves you use. Most of them look the same from the outside—it's the inside that counts. Mullard valves—the only valves containing the wonderful P.M. Filament—ensure the finest reception of which your set is capable at the lowest maintenance cost.

It stands to reason—they cost no more to buy, they consume only .075 amps, their gigantic emission surface gives maximum power and purity and they last for years.

Every radio dealer stocks Mullard MasterValves—the all-British Valve with the wonderful P.M. Filament.

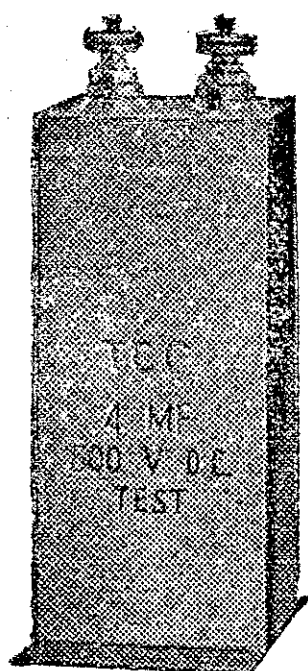
Mullard

THE MASTER VALVE

Sole N.Z. Selling Agents: SPEDDING LIMITED, Cr. Customs St. and Anzac Avenue, Auckland; Dominion Building, Wellington; 214 Madras Street, Christchurch; 42 Crawford Street, Dunedin.

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T.C.C. CONDENSERS



25 YEARS

Of leadership in Condenser manufacture is the record of the T.C.C. You can be certain when you use T.C.C. that you will be trouble-free. Why jeopardise the success of your efforts by using inferior products?

Dominion Distributors :

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Canterbury

Otago

P. F. Mann, Ltd.

Radio Engineering

Christchurch.

Lab., Dunedin.

Ask your dealer for T.C.C.

The Future of Radio

THE future of radio is assured. This is the considered opinion of Mr. E. R. Boucher, a director of the well-known Auckland wholesale house of Spedding Ltd., who has just returned from an extensive trip abroad, during which he investigated the radio industry from all angles. His views are as follow:—

CONTRARY to the feelings of many New Zealanders that radio is waning in popularity, the general impression abroad is that it is really only commencing on its most popular period. At the Radio Convention in Chicago the general tone was most optimistic. There were 300 manufacturers exhibiting, and over 20,000 radio dealers from all parts of the States attended the convention. The tone was most optimistic, and all the addresses which were given by the leading men of the industry and of the various associations were most emphatic that the industry had reached a stable basis, and the progress from now on would be more substantial and satisfactory.

One manufacturer exhibited a seven-valve Console set, which operated direct from the A.C. mains, and had incorporated a dynamic speaker. Figuring on production of a quarter of a million sets for the year, a popular price was made which is only slightly in excess of the old type D.C. set. The result was that during the week of the exhibition the manufacturers of this set booked orders for 400,000 sets. I had an invitation to visit the factory, and although it was practically at the end of the radio season, they were producing and shipping from the factory each day 2000 complete sets. Being of the Console type, these are very bulky, and the factory has a special railway siding running alongside the factory, and from this siding each day a full train load of radio sets left for distribution in various parts of the States.

The new dynamic speaker, the patent of which is held by the Magnavox Company, practically supersedes the horn and cone types. The reason for its popularity is that it is not subject to climatic conditions, and does not show up the imperfections of poor transmission and cheap types of sets. As there is no actual contact between the diaphragm and the magnets, it is impossible to make a dynamic speaker rattle. Another feature is that electrical energy can be secured direct from the lighting mains, so that an enormous volume can be secured by those who desire it.

There has been quite a lot of controversy over the patent situation, but the Magnavox Company has established their rights, and American manufacturers are now manufacturing under license from the Magnavox Company. This new speaker is undoubtedly going to supersede all other types in this country, as it has done in U.S.A., and is now doing in England.

The A.C. set during the past year has proven itself to be thoroughly satisfactory, and the Americans have accepted it generally as every responsible manufacturer now lists the A.C. set as their leading line, although many of them are continuing to produce small quantities of the D.C. set. The advent of this set does not mark the elimination of the D.C. set, because there are many

Mr J. R. Smith

MR. J. R. SMITH, District Telegraph Engineer, Wellington, is being promoted to the position of officer in charge of the Post and Telegraph Research Laboratory.

Mr. Smith entered the service in 1894 as a telegraph messenger in the Ashburton office. After nine years' service on the West Coast, Mr. Smith was in 1908 transferred to Wanganui. There he remained until 1911, when he was transferred from the general to the engineering division of the service and given an appointment in the laboratory. Shortly after joining the engineering division, Mr. Smith assisted with the installation of the first permanent wireless station in Wellington—VLW—and a little later was engaged with the chief electrician in testing out the high power station at Awanui in the Far North.



In 1916 Mr. Smith was despatched to Samoa, where, under the military authorities, he took charge of the wireless station at Apia, the installation of which was then on the point of completion. Two years later saw him in Rarotonga, engaged in the erection of a 1½ k.w. station there. He returned from Rarotonga at the end of 1918, and took up the responsible position of telegraph engineer in charge of Wellington City.

As the results of Mr. Gibbs's investigations abroad, the operations of the laboratory are to be largely extended, mainly in the direction of research work, so that New Zealand may be enabled to keep pace with modern developments, particularly in regard to wireless telephony and radio.

places throughout the States where A.C. current is not available, and, of course, there are those who still prefer the battery set.

A very satisfactory feature is that there are no revolutionary improvements which are liable to upset the industry by making the present apparatus obsolete.

Any improvements which have been effected have been in the audio stages of the set, that is to say, more attention is being paid to the quality of reproduction and the quality of the speaker.

Radio dealers throughout New Zealand should look forward to the radio trade with more confidence with the knowledge that nothing revolutionary has taken place in this season's developments in U.S.A.

WHERE interference is troublesome THE best place for an earthing switch is immediately underneath the lead-in, so that the lead taken from the former can go straight down to earth. it is very often a decided advantage to shorten the aerial by twenty feet or so, especially if it is anyway near 100 ft.

AMATEURS MEET

WELLINGTON RADIO SOCIETY

MR. BYRON BROWN presided over a meeting of the Wellington Amateur Radio Society at the Dominion Farmers' Institute last Tuesday night. There were present about fifty enthusiasts, including ladies, local dealers, and the Broadcasting Company's representative, Mr. Ball.

Following the usual formalities, the secretary, Mr. Taylor, read the correspondence. Letters were received from the Broadcasting Company, the Post and Telegraph Department, and the Hawke's Bay Amateur Radio Society.

Blasting.

Particularly interesting among these was a letter from the company in reference to blasting at the microphone. The society, suspecting the microphones, had written asking if this were the case, and if so would steps be taken to prevent this annoyance.

In reply it was stated that the microphones were constant, and that blasting was uncommon, especially in the case of those used to broadcasting. With others not familiar with the microphone, blasting did occasionally occur.

This letter raised an interesting discussion, in which it was pointed out that blasting was by no means confined to the uninitiated. It was quite a common occurrence with some who had been a considerable time before the microphone. In reply, Mr. Ball stated that, although positions were carefully assigned beforehand, artists were liable

to shift unconsciously, and cause the unpleasant blasting effect.

Sunday Night Concert.

In reply to the society's wish that the Sunday night concert be extended till 10 p.m., it was stated that when possible the concert would be prolonged, but a regular extension till this hour could not be guaranteed.

Racing Ban Resented.

A MOTION was passed unanimously endorsing the attitude of the Hawke's Bay Radio Society towards the racing ban. The feeling of the meeting, was that, by curtailing the running description, itself a pleasure apart from anything else, the associations concerned were depriving the public of much anticipated enjoyment.

Inspection of Sets.

Regarding regular house-to-house inspection the Department wrote stating that while doing everything possible to keep the air clear, it would not be practicable to carry out the society's suggestion. The expense would be great, and there would be no guarantee of the elimination of the trouble.

Hospital Radio.

Mr. I. Levy gave an account of the work carried out by the committee in connection with the installation of radio at the hospital. With slightly more than £1000, collected within two years, the whole of the children's wards, the two nurses' quarters, and the superintendent's quarters had been fitted, while the new block had been wired. The power provided by the set was sufficient to drive every headphone in the hospital. Finally, a balance had been handed to the hospital to form the nucleus of funds to complete the installation.

If the public realised the great amount of good brought about by wireless in such an institution, they would have responded better. That music is a tonic was widely recognised, and no better tribute could be paid than a testimony from one who has known the joy of music when ill. In this direction, a former patient spoke highly of the value of radio to him when in the hospital. During many a monotonous and painful hour, he had been entertained and soothed by the music from the air.

Receiving Valves.

THE remainder of the evening was devoted to an interesting and enlightening lecture on the properties of receiving valves. Mr. Dawson, the local technical expert of Philips Lamps, Ltd. (N.Z.), was the lecturer.

From a description of the fundamental elements in the normal valve, Mr. Dawson went on to deal with the function, introducing common terms and explaining how a knowledge of these enabled the listener to understand and appreciate the literature on the receiving valve.

The types of valves were fully dealt with, the speaker going on to say, and later demonstrated, how a valve in its wrong place, or out of step with the transformer, could cause distortion.

The demonstration was particularly interesting. Operating from gramophone pick-up, music, the frequencies of which approximately ranged from 40 to 3000, was put over a simple valve receiver and through several types of speakers. A noticeable feature about this demonstration was the effect secured by the full amplification of the base notes. The music, to use Mr.

Auckland Notes

(By "Listener.")

THE main topic of radio conversation just now is the forthcoming "Mystery Night," which, if judged solely by the amount of enthusiasm it is creating among listeners, is well worth while as a novelty. This week's "Record," containing the long and varied programme to be submitted, has been eagerly scanned, and already the "guessers" have allotted quite a number of items to performers or to the studio gramophone. There will be keen competition for the valuable prize offered, and one may predict that within the range of 1YA no one will want to tune anything but our own station while the "mystery evening" is in progress.

THE screened grid valve has been occupying the interest of many home constructors in this district, with varying results, if one is to judge from many comments heard. On the whole, however, those who have tried it out well, and followed exactly the directions regarding shielding, are well satisfied with the results they are obtaining. A number of local dealers are manufacturing sets incorporating the latest valves, and for these they find a good demand. It is noticeable, too, that American manufacturers are beginning to place on the New Zealand market their latest sets which incorporate the wonderful "222."

THE company which was running vaudeville at the Embassy Theatre, having gone into liquidation, no more relays from that source are now forthcoming. Listeners regret the occurrence, for several most enjoyable items were procured through the courtesy of the proprietors of the Embassy. The "Majestic" management, though, are always ready to consider radio folk, recognising that in doing so their own theatre is benefiting. Consequently, from time to time we have excellent specialty turns relayed.

A COUPLE of years ago, if a station transmitted what the Americans call "canned music," there would be a general complaint from listeners under the mistaken idea that they were being defrauded of the legitimate expectations from the station. To-day this feeling has undergone a complete change. Regular use is made of records in evening sessions, and not a complaint is voiced. On the other hand, warmest appreciation is regularly expressed. Two factors contribute to this. One is that, with the latest methods of recording and reproduction, a good radio set gives a much better quality to a disc than does the

Brown's expression, possessed "tone and colour" so rarely reproduced by our sets. The speaker attributed this to the correct arrangement of the valves and transformers in his set.

AT the conclusion of the address, one felt that, at least, he knew what a set should do, and had some knowledge of where to seek the trouble.

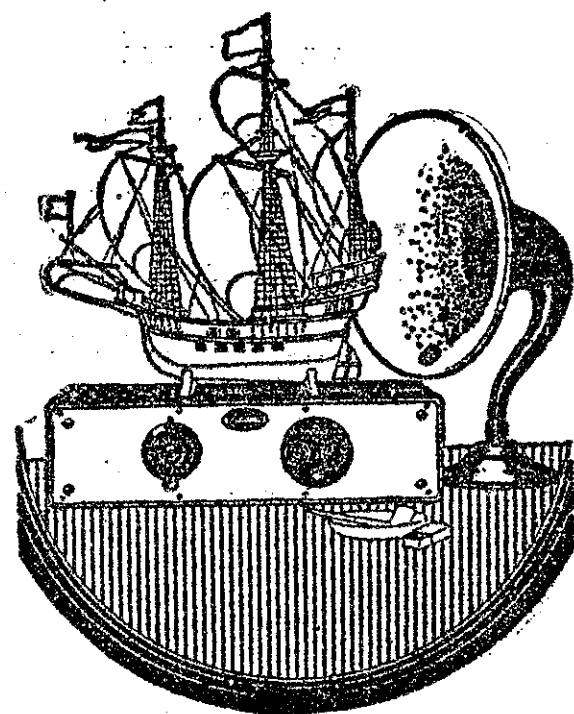
Mr. Dawson was accorded a very hearty vote of thanks for his lecture.

ordinary gramophone itself, and the listener suffers no disturbance through having to wind up, or change records. Another lies in the fact that the best and latest records are used in our studios, and they are presented frequently with explanatory remarks that make them the more appreciated. It was thought at one time that radio would kill the gramophone business; now it is recognised that radio is booming it.

THE short-wave broadcast from Sydney of the wedding of Toti dal Monte was received in the city at good strength on Thursday morning, but there was a disconcerting dynamo hum in the transmission that marred the clarity of the reception. At the beginning of the week the Australian stations were coming in with remarkable volume and distinctness, but conditions changed for the worse on Wednesday night, even Wellington being ruined by strident bursts of static.

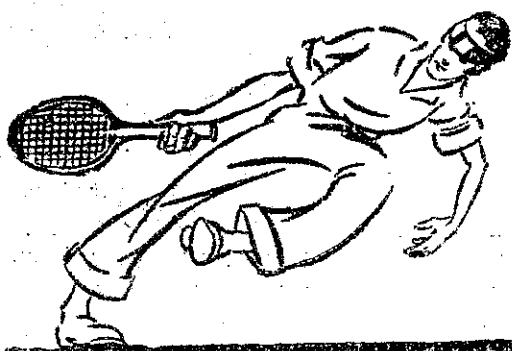
ATTENTION is now being focused upon the trans-Tasman flight, which is expected to eventuate next week-end (since delayed). The broadcasting of this achievement will give a big fillip to listening throughout the Dominion. The writer knows of five persons who have been led to take out licenses through the attraction which this feat in aviation will offer.

ATWATER KENT RADIO



IF PRICE interests you—we can place the famous ATWATER KENT RECEIVER and Radio Speaker in your home at a cost that will bear any comparisons. And the low price includes all the ATWATER KENT features—tone, simplicity, reliability and the rest—that everybody wants. Come in and listen.

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C. & A. ODLIN &
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New Zealand



Emmco
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wonderful
stroke



WHEN EMMCO made their famous line of Battery Eliminators, they made a wonderful stroke.

Emmco Battery Eliminators banish care, worry and trouble. They give you CONSTANT, SILENT POWER, permanent and unflinching. Bring your radio set up to date by installing an Emmco Eliminator.

From £10/10/- up



N.Z. Distributors:
Abel Smeaton, Auckland; Thomas Ballinger, Wellington; L. B. Scott, Christchurch.

Mr C. G. Pegg

RECENTLY during the children's session at 3YA there appeared a gentleman who could speak most graphically and entertainingly of aeroplaning and other things. His easy and delightful chats took the attention of the children and of grown-ups who were listening in. Result: He is to appear at the evening session of 3YA on Saturday, August 25, in a semi-humorous topical talk.

The gentleman referred to is Mr. C. G. Pegg, physical director of the Christchurch Y.M.C.A., and known to radio children as "The Captain." Mr. Pegg was born near Reading, England. In the early stages of the war he served in the Herts Yeomanry in England and in France. Later he was gazetted 2nd Lieutenant in the Middlesex Regiment. He was transferred to the Royal Flying Corps in 1917 and qualified as Flying Officer (Pilot) at the Central Flying School, Upavon. As a member of the Royal Air Force he served in France as Flying Officer in



No. 1 Squadron and is credited with six enemy machines (three crashed, three out of control). He continued to serve in France until the Armistice and then on to the end of the year. He was appointed Director of Physical Education on the Y.M.C.A. National Staff and supervised the work in the

North of England from 1920-1927. In 1927 he left for China with the defence force and was engaged in organising recreations, etc., with the troops for the Y.M.C.A. in Shanghai until November of that year, after which he received his appointment at Christchurch Y.M.C.A.

Mr Ernest Short

LISTENERS-IN to 2YA on Monday, August 27, were accorded the pleasure of hearing Mr. Ernest Short,



a singer who has won the approbation of music lovers in all parts of the Dominion. A baritone of outstanding ability, he has appeared with remarkable success both in England and New Zealand, and his name is associated with many of the foremost musical events of Wellington and other centres throughout the Dominion. Mr. Short has appeared in comic opera, oratorio, grand opera, and innumerable concert performances. He was, by the way, specially engaged to sing at the Dunedin Exhibition.

DAVENTRY, the high-power station of England (25 k.w.), serves an area inhabited by 23 million people.

"A Thing of Beauty is a Joy for Ever."

A Console or Cabinet Radio Receiver represents the best and most acceptable type.

AN OPPORTUNITY FOR A MAHOGANY CONSOLE CABINET FREE.

From to-day we are offering for a short while Crosley Console Receivers in three models at just the price of the corresponding table model and built-in Loudspeaker. Heavy stocks are the reason and here is the buyers' chance to obtain this internationally-known and justly famous "Crosley" equipment at wonderful prices. When you buy a Crosley you invest in an outstanding radio receiver of power and quality. While the opportunity lasts take advantage of this Special Console offer.

L. M. SILVER & CO., Ltd.,

105 Manners St., Wellington.

"You're *THERE* with a Crosley."

Children's Sessions

AT 1YA.

TUESDAY, SEPT. 4.—Uncle George has with him to-night, our dear little friends, the St. John's Brownies. Listen for their choruses and recitations, and songs by The Brown Owl of the Pack.

WEDNESDAY—Here's Uncle Tom again with stories and jokes for all. Also letters and birthday greetings.

THURSDAY—Peter Pan will entertain you, and cousins will sing and play.

FRIDAY—Nod and Aunt Jean have stories and songs for you, and you'll think the Zoo has got loose in the studio when you hear Genial Gerald's animal imitations.

SATURDAY—Cinderella is in charge with jokes, games, stories, and birthday greetings, and listen for Hone Wiri singing Maori songs accompanied by his ukulele, and ending up with a fine haka.

SUNDAY.—Children's Song Service conducted by Uncle Leo, assisted by Cousins from Beresford Street Sunday School.

AT 2YA.

MONDAY, SEPT. 3.—Uncle Jeff and Aunt Gwen will wish the little folk happy birthdays, and then where do you think they are going? Well, they are going nearly to the top of Mt. Egmont, and if you listen very carefully you will hear them enjoying slides in the snow.

TUESDAY.—Big Brother Jack to-night will greet you with a song. Cousin Dora will bring her big 'cello and play, Cousin Marjorie will play on the grand piano, and two little pupils of Miss Jo Halliday, Pamela and Marjorie, have some delightful little poems they would like to say to you.

THURSDAY.—Aunt Gwen, with her bedtime stories for the little ones, will be just by the microphone when the clock strikes six, and with her will be the pupils of Mrs. Thomas, with recitations and happy chorus.

FRIDAY.—Uncle Ernest, to-night, with his happy laugh will cheer little hearts with his fairy messages. And oh! children, who else do you think will be in the studio?—why, the Model Country School No. 1, from Thorndon Normal, under Mr. Tremewan.

SATURDAY.—Uncle Toby, Aunt Gwen, and four little pupils of Mrs. Martyn Williams. What fun they will have—recitations, songs, and bedtime stories, and, of course, the Good Night Song.

SUNDAY.—The Children's Song Service will be conducted by Uncle Ernest, assisted by the children of St. James's Presbyterian Sunday School, under Mr. Brooker.

AT 3YA.

MONDAY, SEPTEMBER 3—"Flower Market Night." Scatterjoy will conduct you around. You will hear the quaint and cheerful jargon of flower vendors and hear the flower sellers' songs, sung by Cousins Eunice, Margaret, Jean and Audrey. Also the best writer's verse.

WEDNESDAY—Another night with Uncle Jack and his stories to suit everyone. The "Three Old Maids of Lee" are coming too, and Cousin Edith is singing.

THURSDAY—Chuckie and Aunt Pat "on the air" in story, and more Christopher Robin songs. Cousins Molly, Eunice and Ivy with their clever recitations and songs.

FRIDAY—Big Brother and Miss Arpeggio on deck to-night, and we are to have the first of a series of talks on our Scouts and Scout Ideals—so listen in, boys (and girls, too).

SATURDAY—Uncle Sam and a band of Scottish cousins will keep you wide awake and happy for an hour.

SUNDAY—Uncle David will conduct the Song Service to-night, and the hymns will be sung by the scholars from the Tennyson St. Congregational Sunday School.

AT 4YA.

TUESDAY, SEPT. 4.—Have you heard of the queer people that live on the roof of the world? The sort of folk who give their bairns a tallow candle to suck in place of a lollie. Ugh. But the bai like it and ask for more. Brother Bill is taking the family to see these folk to-night. Are you coming? And the MacAndrew Road School, with Mr. Anderson to lead them, will provide music on the way. Letters, and the radio postie as usual.

FRIDAY.—"The more we laugh together, the merrier we'll be," says the Happy Folks' Anthem from 4YA. And certainly it seems to be true. Aunt Sheila and Big Brother Bill are taking the family another trip to the London Zoo. There's lots more to be seen than we have already looked at, so why not come along with us. Such comical things, too. The school children from across the way are singing to-night at 4YA—Moray Place School, I mean; and the radio postie will blow his whistle that sounds like a wee fire-engine siren.

SIMULTANEOUS broadcasting by which a number of stations are linked together by land line and transmit one item from a single point, was an invention of the B.B.C. It was first introduced into Great Britain in 1923, being designed to bring the best programmes within the reach of the holders of the cheapest crystal sets.

Transmission Apparatus of a Short-wave Station



CORRESPONDENT interested in short-wave reception, Mr. A. P. Morrison, of Brooklyn, sends the following account of 3XN, the short-wave station attached to WJZ (Whippany, New Jersey):—

THE particular equipment used in the tests at Whippany is the development model of the Western Electric 7-A radio broadcasting transmitter, rated at 50 kilowatts and transmitting on 59.9 metres. It has been created to make possible the provision over areas of reasonable magnitude of broadcasting service consistent with the ever-growing requirements of its art.

The transmitter uses 25 valves, of which 14 are water cooled. The valves and their related circuits are mounted on and behind ten panels; on a floor below are installed some of the bulkier pieces of apparatus, such as transformers, generators, and filters. With the normal unmodulated output to the aerial is 50 kilowatts, the valve capacity is adequate to deliver 200 kilowatts, which are required during peaks of modulation.

Crystal Control.

WITH so many broadcasting stations on the air, it is of first importance that each one maintain its carrier frequency constant at the value assigned by the Federal Radio Commission. To this end, the frequency of the carrier wave is controlled by the oscillation of a small quartz plate. Cut from a single crystal, with proper orientation as to the crystal-line and optical axes, the quartz plate carefully ground to a thickness determined by its desired frequency, is then associated with a master oscillating circuit. As one precaution to ensure constant frequency, the plate is mounted in a container where its temperature is held constant. Speech currents from the control room are amplified by two stages in the set proper; the output voltage from the last of these is used for modulation. The radio frequency generated by the valve under control of the crystal is amplified in five stages. On the plate voltage of the second-stage valve is superposed the audio-frequency voltage for modulation. The audio-frequency voltage is sufficient to effect complete on 100 per cent. modulation of the carrier.

Amplification.

THE modulation stage is followed by three more stages of radio frequency amplification, each of which is a push-pull circuit. Water-cooled valves are used in the last two stages; two in one and six in the other. Tuned circuits from the enter-stage couplings and also transfer the output power to a transmission line which leads out to the antenna system. In the final tuned circuit, currents as great as one hundred amperes may flow through the heavy copper tubing of the inductance coil.

POWER for the set, amounting to about 250 kilowatts, is drawn from central station lines as 440 volt, 60 cycle, 3-phase alternating current. A major portion of this power goes to a six-phase vacuum tube rectifier,

which supplies direct current at 17,000 volts to the last two stages. One motor-generator set supplies about 550 amperes direct current to the amplifier filaments; another set supplies grid-bias voltages. Outputs of both these generators pass through filters, that for the filaments using electrolytic condensers and a large choke coil.

To prevent excessive heating and consequent damage to the valves, provision must be made to remove the heat generated in operation. For many of the valves radiation into the air is sufficient, but for others water cooling is necessary.

Cooling.

THESE valves are inserted in jackets through which water flows in contact with the valve anodes. Water is led to and from its valve jackets through lengths of coiled hose. This is to provide the necessary insulation between jackets, which are connected with the anodes, and therefore at high potential, and the other parts of the cooling system which are grounded.

The water in turn is cooled by radiators, through which air is forced by large fans. About a hundred gallons of water a minute flow through the cooling system. Should the water cease to flow, or should its temperature rise beyond a safe value, power is automatically removed from the tubes.

Layout.

THE layout of the Whippany laboratory includes a control room where the speech input amplifier and related equipment are located. Adjoining it is the transmitting room itself. Along one wall of this room is an assembly fronted by seven panels, housing the auditor and radio frequency circuits.

At the end of the room is a group of three panels: one for general power control, which carries its push buttons by which the set is started and stopped; one for the 17,000-volt rectifier and one for the 1500-volt rectifier. Valves for these rectifiers are mounted behind their respective panels. The transformers and filtering equipment for the higher voltage rectifier is located directly beneath, on a lower floor. On this floor are also the motor-generator sets.

In order to keep the station and its equipment outside the more intense field of the aerial connection is made between the transmitter and antenna by a two-wire line about five hundred feet long. The voltage between wires is approximately 6000, and its line functions as any other though its power is transmitted at a very high frequency. The tuned circuits for coupling to the aerial are located in shielded compartments at the end of the transmission line directly beneath the aerial.

MUCH thought has been given to the protection of its operating staff against high voltages. Throughout the transmitters access is had to the circuits through doors and windows which must be securely locked before the circuits can be engaged; in order to open these points of access it is necessary to unlock them through a mechanism which first disconnects the

power supply and grounds the high voltage parts.

All parts requiring adjustment or replacement are readily accessible. Other portions of the apparatus are arranged with a view primarily to the compactness of its equipment. This promotes economy in floor space, facilitates protection, and enables important elements to be observed by a minimum of personnel.

Radiation.

SATISFACTORY services to broadcast listeners—the sole justification of any station—requires that everything possible be done to minimise interference with other pro-

grammes. To avoid the annoying "whistle" which results from heterodyning of its carrier with that of a station occupying an adjacent frequency channel, the carrier must remain very close to its assigned value. This requirement is well met through crystal control.

Moreover, radiation of harmonic frequencies must be as little as possible, since this is in effect a transmission of the programme at a frequency which may conflict with that assigned to another station. The disturbing effect of harmonics being proportioned to their absolute value, special precautions must be taken in the construction of so powerful a transmitter.

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The Woman's Point of View By "Verity"

The "Better Way" of Home-making.

THE "better way" of home-making lies not in the house and its furnishings, but in the people themselves. The home may be beautiful and comfortable, and yet be lacking. Why? Because the tender, patient and sympathetic spirit of understanding is not there. The wife who does not show how bored she is when John talks by the hour of his work, which she does not understand; the husband who listens patiently to his wife's narration of her daily tasks; the parents who have time to play with their children and listen to their tales of the day's happenings, will make a better and happier home, be it ever so poor and comfortless.—**Thirteen Years Married (Nelson).**

The "Better Way" of Beauty.

IT is very hard for a beauty-loving woman of limited means to be obliged to deny herself those things for which her nature craves. Beautiful pictures, ornaments, books—all those things which so beautify a home—how often she must pass them by and expend her small means on the necessities of life. Thus does the mundane exclude the aesthetic, and life become "beauty-starved."

A friend of mine with a great capacity for appreciation of the beautiful has devised a plan whereby she can from time to time, without detriment to the essential, satisfy to some extent her craving for beauty. She saves her threepences! A moneybox on the mantel (reminiscent of childhood days) receives all the threepences which find their way into her possession, and it is surprising how quickly they accumulate without any apparent strain on her slender purse. Then with what joy she fares forth to acquire some much-coveted possession for her home!

Sister readers, even though your means be small, do not let yourselves be altogether starved for beauty. Would it not be a "better way" to try this plan and gather to yourselves a portion at least of that beauty which calls to you?—"Cynthia" (Christchurch.)

The "Better Way" of Housekeeping.

THINKING this matter over, I am sure we will soon come to the conclusion that opinions differ considerably on the point, and we will notice that a practice adopted in one home will be avoided in another. Consider, for instance, the family who prefer an expensive, though handy, flat in town, as against the family who chose a home in a suburb, with a garden and a nice outlook to compensate for the distance. We will also call to mind that quiet and spotlessly spick

The "Better Way" No. 3.

Result of Competition

IN judging our competitions it is becoming increasingly difficult to select one "Better Way"—and one only—as being prize-worthy from among so many good notions. This month, therefore, we have divided the prize between "Thirteen Years Married" and "I.M."

"Thirteen Years Married" briefly and simply has unhesitatingly placed her finger upon a deep fundamental truth which underlies true "home-happiness" and without which "home" is merely a name for four walls and a roof—the necessity of cultivating the Spirit of Understanding.

"I.M.'s" advice in her "Clarion Cry" should be an incentive to us to tackle with fresh vigour one of the most unpopular of household tasks, which unfortunately, like the poor, "we have always with us." At any rate, she is to be congratulated on her spirited attempt at making something attractive out of mere drudgery.

All other entries published receive payment at space rates.

—VERITY.

and span house we know of, where such a cold and cheerless atmosphere prevails, and we cannot but compare it with the probably noisy and untidy home where, however, cheerfulness and goodwill are likely to greet us on entering. Then there is the "business couple." They prefer no home life to speak of, but a nice bank account and something to look forward to, to the comfortable and happy home of any other young couple, with probably the thought in the background of that "rainy day" still unprovided for.

So it seems to me that if we each choose our own ideal home, maintaining it in our own "better way" and if we ourselves are happy, what does the rest matter!—"Helena" (Brooklyn.)

"Better Way" Breakfast Food.

"IT is such a problem to know what to give my child for breakfast for a change," said a mother recently, and I think many mothers of school children with variable appetites could say the same. Here is a simple breakfast food of which my children never seem to tire. Perhaps others would like to try the recipe.

Finding a quantity of brown bread was being wasted, no one caring to eat it when stale, I tried this plan of using it up successfully.

I put all stale brown bread, crusts included, through the mincer, adding finely minced peanuts, about an ounce to each cupful of breadcrumbs, and a teaspoonful of sugar to same quantity, and a pinch of salt. Mix all thoroughly and spread thinly over oven-trays or shallow tins, baking slowly till thoroughly dry and crisp and golden brown. This takes nearly an hour. The result is an appetising food which can be eaten like grapes, with milk and sugar if desired. The children like it better than the bought products. It is

economical, pure, and everybody knows that these crisp foods are good for teeth and digestion. To preserve crispness, place in preserving jars with screw tops.

It would keep indefinitely if the children were not so fond of it.—**Eldon, Takapuna.**

Cooking a Joint on a Gas Ring.

PUT the joint in a saucepan in which you have melted a piece of dripping. Shut the lid down tightly and put it on the gas, turned very low. Allow it double as long as you would in the oven, turning it over at half-time. It will come out tender and juicy. You can cook a whole dinner in the saucepan. By peeling the potatoes and placing them on top of the meat, after you have turned it, they will cook to perfection by the time the meat is done, and you will also have the satisfaction of knowing that all the valuable salts are retained. Sprouts or cauliflowers, in small pieces can be added also.—**E.R.H., Epsom.**

"Better Way" Marmalade.

NOW marmalade season is in full swing a quick and very satisfactory method of making it might be useful to readers. Ingredients: 3lb. marmalade oranges, 3 lemons, 6 pints water, 9lb. sugar. Method: Boil fruit and half the water fast for half an hour. Boil sugar and the other half of water fast for half an hour. Finally boil all together till it jellies, about three-quarters of an hour.

All soaking is done away with; the fruit is cut in half, the juice squeezed out, and the rinds put through the mincing machine, a much simpler way than the old tedious methods, and the result is delicious.—**Miss Isaacson, Christchurch.**

Plum Pudding.

SOAK four tablespoons of sago in half a pint of milk over night, add two cups of breadcrumbs, three-quarters of a cup of sugar, one tablespoon of melted butter or soft dripping, one cup of raisins, one and a half teaspoons of carbonate of soda. Boil for three hours. Delicious but economical.—**Grandma (Kaipara).**

"The Clarion Cry."

EXCELSIOR! Look up, look up! The clarion cry of the youth of old. "Wash up, wash up!" should be the device to inspire the little soldiers of the home to-day, if they hope to gain a perfect efficiency in the management thereof. Incredibly, mountains of soiled dishes accumulate, and leering from their scattered piles, tell a tale of work misguided—until at last, that imp called Chaos, staring with malicious eyes—makes himself god of the kitchen, and calls it his domain.

Wearily, sick at heart, the housewife wonders why her work goes on forever; for nothing depresses, or demoralises so soon, as the mocking, despot laughter of Chaos, and his tribe. Soon he seems to reign in every niche and corner—even in that frying pan where she, despondent, and in haste, will cook those poor defenceless sausages in their own homely skins of—well, can one wonder that they burst with indignation, knowing full well the luscious treat they should have been if rolled in golden crumbs instead, and served so succulently rich, brown, crisp, and appetising—a feast for a king indeed! Alack-a-day, where Chaos broods is never found a banner with the words "Wash up"; it has become a little hidden obstacle on which the barques called "Matrimony" often founder. Men find a keynote to help them to success—may women find it also, in those simple words, "Wash up." Life's other common tasks take on a zest, inspired by the sight of that gleaming sink, and shining kitchenette, where Order rules, with all his cupboards closed on cleanly, self-respecting cups and dishes. Risking the shade of Kingsley rising up to smile, for this misquotation—its message comes to those who yet must learn the lesson:—

"Wash up," wise jade, let others imitate thee—

Buck up! wash up, don't leave them all day long—

Hesitate, procrastinate, and life won't be

One grand Sweet Song!

I.M. (Kelburn).

Home-made Linoleum.

TAKE an old carpet that is whole but too shabby for use. Clean it thoroughly and tack it down smoothly on kitchen floor. Make a thick boiled paste of flour and water. Rub a coat of this paste over carpet with white-wash brush. When thoroughly dry apply coat of paint; when dry apply second coat, and you will have a cheap and durable floor covering. If a person is artistically inclined it can be decorated by painting or stencilling in whatever colours desired. I can assure the readers of your paper that these home-made linoleums are very serviceable, and are not cold to the feet as linoleum, and can very easily be cleaned.—**C. T. (Tahuna).**

To Peel Onions.

WHEN peeling onions, always peel from the root end, and you will find that they will not affect the eyes in the slightest.—**Mrs. M. Toulson (Waikato).**

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

The Woman's Point of View

The Annotations of Annabel

DEAREST:

Amid the storm and stress, physical, political, ecclesiastical, that of late have assailed us, 'twas a pleasant interlude to lean back on the hard chairs of the Wellington Concert Chamber and listen to the doctrine of endeavour according to a recent visitor to our Dominion, whose lectures on matters of metaphysical moment were eagerly mopped up by numerous and admiring satellites.

MANY modes there are of reiterating the dictum of Henley that a man is captain of his soul. Trine in his day fed the public with: "The mind is everything; what you think you become"; and we continue to absorb similar mental and spiritual pabulum, set before us with simplicity, unctuousness or ambiguity, as the case may be. Many talkers cannot kill interest in the ego, however, as was evidenced by the crowds that nightly hung on the words of the latest exponent of practical psychology.

WITH restraint and dignity, using sonorous voice to excellent advantage, possessing few mannerisms and perfect deportment—to employ an ancient and expressive substantive—Dr. Fennelly set forth an attractive creed of the government of our spiritual forces, which, rightly controlled, would lead us unerringly to whatsoever things are good, whatsoever things are lovely, a blissful existence for the mind and the body.

"THOUGHTS — Words — Action."

There, we were assured in mellifluous accents, lay the secret of success in a nutshell. Right attitude of mind, translated into the daily deed, the common task, would bring to us the gifts of the gods, lead us up the Path of Parnassus straight to the land of heart's desire.

NOT so easy as it sounds, however, and if lived up to perchance would prove as exhausting as the continual Endeavour and Endurance belauded by the Victorian Sage of Chelsea; but the psychological campaign is an altruistic one, and calculated to assist in irridiating the grey face of the world. Profitable also, I reflected, as, queued up with a

throng of Patient Peris, and waved

back from the door of our desire by the temporary Peter, I admired rivulets of silver coin rattling from collection plates into bags neatly arranged in piles by the admirably poised, entirely agreeable and efficient female factotum of the tour.

EAGERLY we listened and learned, going forth very conscious of spiritual aura, determined to placate fate by undaunted adherence to Right Thought, and so attain poise and balance approximating to that of those Olympians, in the uniform of the Force, who with God-like calm stand poised at the four corners of the city amid the surge and welter of traffic, throwing beneficent aegis around bustled and hustled humanity.

ENTIRELY unversed in horticulture lore, yet greatly daring, I plan a window-box to gladden the long summer days that will come. Forlornly for the moment flap a few shoots in the icy breeze, sadly at variance with brilliance of gay purple and yellow of dear daffodils and violets in windows that shed a glow on weary wayfarers hastening to their ain fireside, over slippery pavements, in the cold dusk of a winter by no means past.

IN arctic atmosphere diaphonous garments displayed, though of amazing chic, fail to entice. But one fine day the sun will shine, revealing unsuspected discrepancies, and the realisation will flash upon the consciousness, as invariably it does in sweet September, that 'tis time to embark on the adventure of the spring sartorial campaign. Charming and immensely useful, en passant, are supple silken coats, in tawny shades of sand and bronze, and a blue that is not the once ubiquitous "navy" or royal, but an attractive blend of the two. With these coats will be worn those coloured shoes that are to descend upon dull pavements like a fluttering flock of butterflies, quite ousting the vulgarised reptilian variety that for so long have literally held the floor.

Your

ANNABEL LEE.

Books

The Battle of the Horizons.
(Sylvia Thompson.)

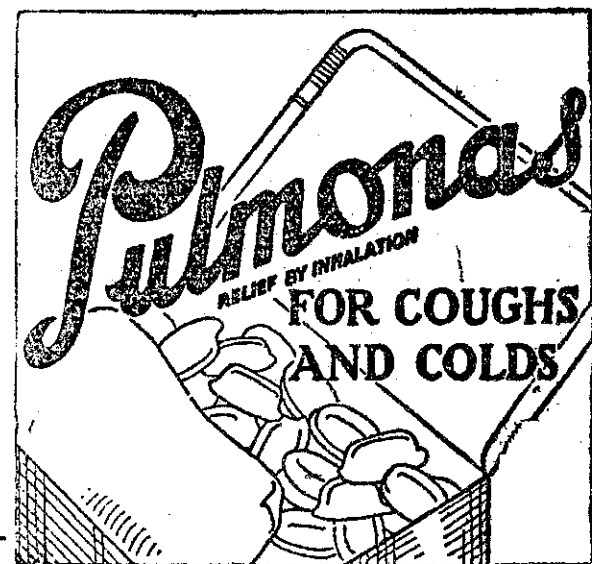
THOSE who delighted in Miss Thompson's interesting and successful post-war novel, "The Hounds of Spring," will welcome with interest another work from her vivacious pen. The horizons are those of England and America; and the story that of an American girl, lovely, enthusiastic and eager, who marries an Englishman, of whose country and people she cherishes romantic dreams. Together they fare forth from America, where first they met, and live in the English home of the young husband. Geoffrey is extremely well drawn, true to type, with those persistent characteristics that are so apparent in his race and class. His charming mother is a living figure, and the rest of the family skilfully depicted, with uncompromising truthfulness, and sympathy withal. Particularly attractive are the twins, with their dogs and their Communism, their naivete, sophistication, and delightful irresistible youth. Puzzling to the earnest, beautiful stranger are some of the qualities of the family circle, and foolishly she imagines her Geoffrey to be lacking in insight and appreciation, and rather lethargic in adopting her plans and ambitions for his political career. The misunderstandings that arise, the vagaries of the twins, their respective loves and marriages, the contradistinction, sharp and clashing, between English and American point of view, all go to make excellent reading. The clouds disperse at the long last, just in the good old-fashioned way, and all are happy, ex-

cept the pensive Patricia, with her unhappy love and the nobility of her renunciation. An entertaining book, and, though not perhaps in quite the same category as the author's earlier novel, charming enough in its genre and certain to be widely read.—R.U.I.

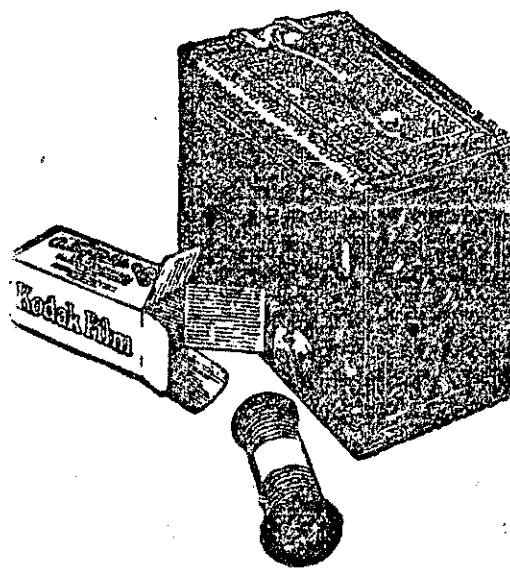
LITTLE GARDENS

"There is a benediction in a little garden's grace,
A chalice filled with wonder at the heart of commonplace.
Where homely colours gleam and glance like stars upon the sod.
The grace of little gardens is the eternal grace of God."
—Florence Bone.

Like a postage stamp, a man's value depends on his ability to stick to a thing till he gets there.—Joseph Chamberlain.



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Features of Next Week's Programmes

1YA Notes

THE church service for Sunday evening will be broadcast from St. Mary's Cathedral, the preacher being Canon Percival James. At the conclusion of the church service relay, the Auckland Municipal Band will be put on the air, in "Military Band Selections."

OPERATIC excerpts to be presented on Tuesday evening will be taken from Gluck's opera, "Orpheus," and will be produced under the direction of Madame Irene Ainsley. The vocalists for the evening will be Misses V. Harrison and Beryl Adams, Madame Ainsley, Mr. C. Suisted, and Mr. J. Hogan. Besides performing in the excerpts from "Orpheus," these artists will also be heard in a number of ballads and operatic arias. The instrumentalists for the evening will be the Auckland Trio, Miss Ina Bosworth (violinist), and the Majestic Theatre Orchestra under Mr. J. Whiteford Waugh. Mr. A. B. Chappell's talks on "Old New Zealand" have now reached a very interesting stage, and on Tuesday evening he will speak on those pioneers, "Selwyn and Pattison."

THE Auckland Municipal Band always provides a treat for listeners, and for Wednesday evening the bandmaster, Mr. Christopher Smith, has arranged a splendid programme of classical and popular selections. From the studio the well-known baritone, Mr. Frank Sutherland, will contribute a variety of ballads, while Mr. Alan McSkimming (elocutionist) will make a welcome reappearance before the microphone in humorous and dramatic parts.

A WELL-VARIED programme has been arranged for Thursday evening, the main contributors being the Clarion Quartet, who have now established themselves as firm favourites with listeners. Also on the same programme will be those old favourites, The Asquiths, in another of their thirty-minute drawing-room entertainments, in which they will introduce further novelty and humorous selections. The Auckland Trio will contribute instrumental items, while Hawaiian orchestral selections will also be rendered.

THE main contributors to Friday night's programme will be Madame Mary Towsey's Quartet, comprising Miss Edna Peace, Madame Towsey, Mr. J. McDougall, and Mr. John Bree. These artists will be heard in a variety of quartets, duets, and solos. The Bohemian Trio will also be heard in popular vocal and instrumental items, while the Auckland Trio and Miss Molly Wright will provide instrumental trio and cello numbers. The "Wizard" will again introduce his novelty word wangles, and should mystify listeners with his word conjuring. Outstanding on Fri-

One Act Comedy from 2YA.

MR. J. F. Montague, of Auckland, one of the best-known and most popular performers at 1YA, is at present acting as adjudicator in elocution at the Ashburton Competitions. On his return to Wellington he will be heard on the air from 2YA, on Thursday, September 6, when he will present a one-act comedy, "The Perfect Pair," in which he will be assisted by Miss Edna Purdie, of Wellington. Mr. Montague will also be heard in two solo items: "Thomas Atkins" (dramatic), and "The Wedding Day" (humorous). He will also broadcast at the 2YA Children's Session on the same date, September 6. Among the 1YA children he is known as "Sunny Jim," and his contributions are extremely popular with the kiddies there.

day's programme should be the humour of Mr. J. F. Montague, who will be welcomed back after his tour south.

A WELL-VARIED programme has been arranged for Saturday evening's entertainment, the artists including Miss Christina Ormiston, who, after some months' absence from Auckland, has returned to the city, and will again be heard on the air. Also contributing to this programme will be the well-known Auckland baritone, Mr. Stan. Pritchard, and the Griffiths Duo, who will entertain with a number of humorous sketches, while a new performer in the person of Mr. W. Unge-muth, will render a number of concert zither solos. This will be followed by a relay of dance music from the Dixieland Cabaret.

2YA Notes

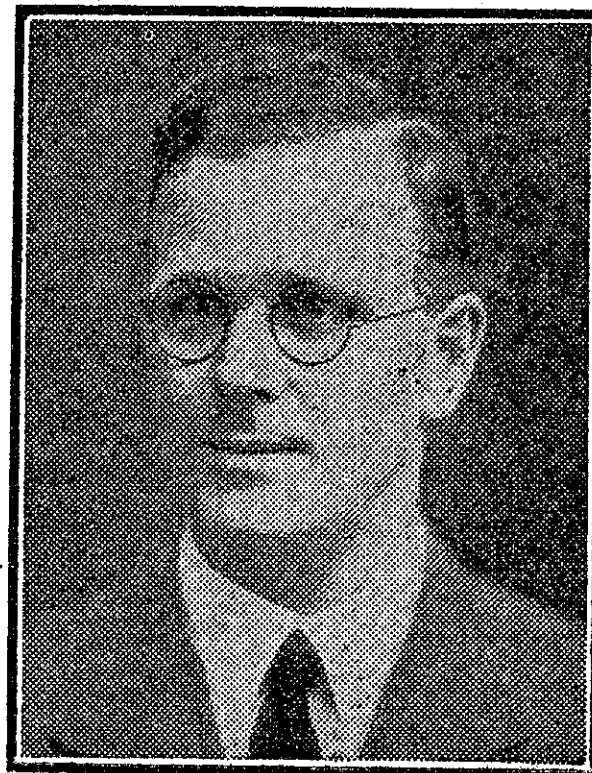
THE Ariel Singers, whose programmes are conspicuous for variety and artistry, will again be on the air on Monday, September 3, with a specially selected range of concerted and solo vocal numbers. Associated with the Ariel Singers will be Mr. John Prouse, baritone, and Mr. A. Stanley Warwick, elocutionist.

THERE is a surprise for the ladies on September 4, when Mr. Len Barnes will sing a bracket of four numbers, "So Perverse" (the surprise), by Gibbs; "Pirate Song," "Roadways," and "Five Eyes"; and with Mrs. Harris, "The Dancing Honeymoon" from "Battling Butler." Mrs. Harris will sing "On the March," from "The Song of a Vivandiere," by Oliver. Mrs. Arthur Coe is giving "I Looked into Your Garden," by Wood, and, with the quartet, "Come Back to Me," and "Just a-Wearyin' for You" will be given by Miss Lily Mackie. A quartet by Walford Davies, "Good-night Song," and "Who That Knows," a madrigal from "The Princess of Kensington," will also be sung.

On this evening Mr. Lionel Inch, a talented humorist, will make his first appearance before the microphone.

THE Mellow Fellows will again submit a budget of harmonised songs, solos, and other items on Thurs-

day, September 6. They will include novelty items, such as "To-night's My Night with Baby" and "When the Red, Red Robin," given by their Talkative Fellow of the party. There will be an excellent duet, "Constabulary Duty," by Two Fellows, which will be much to the liking of listeners who appreciate this form of vocal art, and songs by the Baritone Fellow will be "Star of My Soul" and "That Old Bush Shanty of Mine." "Kentucky Lullaby," harmonised in true "Mellow Fellows"



MR. OLIVE HINDLE.

The baritone of the Madame Gower Burns Grand Opera Quartet singing at 3YA. —Steffano Webb, photo.

style, will conclude their contributions to the programme.

A special feature of this evening's radio entertainment will be the presentation of a one-act comedy by Mr. J. L. Montague and Miss Edna Purdie, Mr. Montagu also contributing specially selected elocutionary numbers.

Mr. Johannes Andersen will deliver another of his very interesting lectures on "Bird Life." The instrumental position of the programme will be provided by the Central Mission Band.

ON Friday, September 7, the vocal programme will be supplied by the Philharmonic Quartet, who may be relied upon to present a delightful range of melodious gems. Miss Joyce Downing will make her first appearance as a radio pianiste, while Mr. Barton Ginger, one of Wellington's foremost elocutionists, and a notable competitions champion, will contribute specially-selected items, humorous and otherwise, from his extensive repertoire.

THE major portion of the vocal programme to be broadcast on Saturday, September 22, is in the hands of the Melodic Four Male Quartet. "Slow River," as arranged by Mr. Frank Crowther, will on this occasion be repeated in response to many requests, and will be followed by the well-known humorous quartet. "A Catastrophe," and the pathetic little number "The Goslings," "A Musical Muddle," introducing many well-known airs, will be sure to please those who are fond of "pot pourris." The pleasure of the evening will be enhanced by the first appearance of Mrs. F. Tunley, a sweet-voiced mezzo-soprano, and The Flat Idlers will also entertain with humorous songs at the piano.

THE after-church concert on Sunday, September 9, will be provided by the Wellington City Municipal Tramways Band, broadcast on relay from His Majesty's Theatre.

3YA Items

A MORE than usually bright band concert programme has been arranged for Monday evening. Very varied will be the instrumental items to be played by the Municipal Band. Variety, too, also marks the vocal items to be given by Miss Hilda Hutt, Miss Agnes Richardson, Mr. T. G. Rogers, and Mr. Fred Penfold. A special vocal item will be a duet by the Dolce Duo, "I'll Sing to You." Elocutionary items will be given by Miss Kathleen O'Brien.

WEDNESDAY evening's concert will be again of a miscellaneous character. A new vocalist to 3YA, in the person of Mrs. C. L. Crowley (soprano) will be heard. Mrs. Crowley is a member of the Christchurch Philharmonic Society. Miss Nellie Lowe is also singing. Her songs will be "Softly Awakes My Heart" (Saint-Saens), and Bemberg's "Hindoo Song." The male voices for Wednesday evening will be those of Mr. A. G. Thompson (baritone), and Mr. Frank Morrison (tenor), both very popular performers at 3YA. Humorous recitations will be given by Miss Naare Hooper, and instrumental pieces will be played by Miss Aileen Warren (piano) and Mr. S. J. Creagh (cornet).

S. P. ANDREW,

Photographer,

47 EEN ST., AUCKLAND.

STEFFANO WEBB,

Photographer,

HIGH ST., CHRISTCHURCH.

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ART-LITE STUDIOS

(Chas. M. Brown),

91A PRINCES ST., DUNEDIN
(Above the Ritz).

A VOCAL programme of the works of German composers will be submitted by the Madame Gower-Burns Grand Opera Quartet on Thursday evening. In German compositions there is an unlimited source of supply, and an excellent selection has been made for Thursday evening. Mendelssohn, Schumann, Schubert, and Beethoven of course figure prominently on the programme, but the works of other famous composers will also be presented. There will be two specially fine duets sung, both works of Mendelssohn, "On Wings of Music" and "Greeting." A quartet to be sung, "The Wood Minstrels," is also by Mendelssohn.

PORTIA'S famous speech pleading for mercy will be given by Miss Dorothy Jenkin. She will also give Kipling's "The Glory of the Garden."

"FLORA'S Holiday," a very charming song cycle by Lane-Wilson, will be sung in the first half of Friday evening's programme by the popular Melodious Four. This song cycle is full of fine melodies. Two items are to be given by Mr. Jock Lockhart, whose appearance as a humorous entertainer at 3YA are always very welcome. The second portion of the evening's entertainment (which will continue until 11 o'clock) will include numerous miscellaneous vocal items, included among which will be some plantation choruses. Dance music will be played by the Williams Dance Band.

THE always popular Avonion Minstrels, Mrs. Sen Jowett, Miss Elaine Moody's Hawaiian Trio, Mr. Bracey Wilson (Scottish comedian), Studio Trio, Mr. L. T. J. Ryan (elocutionist), and Mr. Stan Birch (banjolin solos) will be contributing to Saturday evening's radio vaudeville.

4YA Notes

THE service from Knox Church will be broadcast on Sunday evening, after which a studio concert will take place.

TUESDAY evening's programme will contain a variety of entertainment, including vocal, instrumental, and elocutionary items by well-known Dun-

edin performers. Miss Wyn McPeak (contralto), Mr. Charles Edwards (tenor), Mr. R. B. Macdonald (baritone), and Mr. E. G. Bond (bass), will provide the vocal numbers. The solos to be rendered by Mr. Macdonald will include Carrol's "Rip Van Winkle" and Richard's "Sailor's Paradise." Mr. Charles Edwards and Mr. R. B. Macdonald will sing as a duet "The Moon Has Raised Her Lamb Above," from the musical play "The Lily of Killarney." Mr. Allan Young, the well-known entertainer, will recite by request, "Levinsky the Politician," and, in addition, will entertain with some humorous stories. Miss Nancy Ayson will recite the "Quaker Sinner" and other numbers. The instrumentalists for the evening include Mr. R. B. Hall (trombone), Miss Eva Judd (violiniste), and Miss Alice Wilson, F.T.C.L. (pianiste).

THE programme for Wednesday evening will be, as usual, of the mirth-provoking kind, complete with light, tuneful songs, comic songs, and a good array of light instrumental music. Miss Jacqueline Burke will sing some numbers from the musical comedy "Sunny." Mr. Billy Gay will feature some of the latest popular song hits, Mr. Jimmie Paterson, Scottish comedian, will entertain with some Scottish songs and stories. Jazz piano solos will be given by Mr. T. V. Anson, his numbers comprising clever arrangements of some of the latest popular song hits. Piano-acordion solos will be played by Mr. E. Heaney. Spanish and Hawaiian guitar duets will be given by Messrs. Tyrie and Maitland. Miss Billie Lorraine and Major F. H. Lampen will present humorous sketches. Miss Eileen Cooper, who will make her first appearance at the microphone in New Zealand on Wednesday evening, is a clever entertainer from Australia. She has had years of experience in broadcasting. She will present songs at the piano, including "The Egg" and "Naughty Little Word."

THE first hour on Friday evening's concert will be from the studio with items of outstanding merit presented by Miss Dorothy Skinner (contralto), Mr. Neil Black (bass), Mr. D. J. Robertson (cornetist), Mr. Charles E. Gibbons (flautist), and Mrs. Ernest Drake (studio-pianiste). It will be a most enjoyable programme.

Signor A. P. Truda

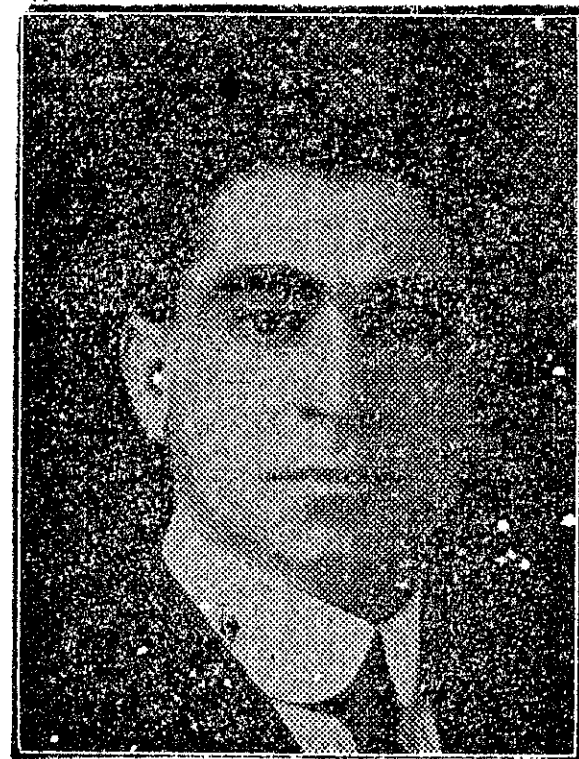
A GREAT acquisition to 2YA Orchestra is Signor A. P. Truda, well known throughout New Zealand and Australia as a flautist.

Signor A. P. Truda comes from a distinguished musical family. From the early age of ten he commenced his musical education, in the Principe Umberto College in Salerno, where for six years under Professor Genovese he studied music and the art of flute-playing in its various branches. To further continue his studies he went to Naples for three years, where he became a pupil of the celebrated flautist Professor Casi, a protege of Briccialdi, who was noted for his wonderful tone-colour, phrasing and breath control. The Professor, a man of great culture and musical experience, quickly perceiving Truda's sense of pitch, temperament, and musical aptness, took a keen interest in his pupil and certainly found no difficulty in getting him to absorb his own fine gifts and qualities. At a college concert where the advanced and talented students were given an opportunity of performing in the presence of notable conductors, Truda played "Fantasia" from "Rigoletto," a number with a melodious theme and technically difficult variations. His crystalline tone, full of soul

THE concert on Saturday night will be of an interesting nature, rendered by leading artists. Miss Agnes Guy (mezzo-soprano) will contribute two of del Riego's songs, "Oh, Dry Those Tears" and "The Happy Song." Miss Irene Horniblow, L.R.A.M. (contralto) will provide two of Cyril Scott's compositions, "Looking Back" and "Lullaby," and in addition will sing "Softly Awakes My Heart," from "Samson and Delilah." Mr. Arthur Lungiey will be heard in two operatic numbers, and Massenet's "Open Thy Blue Eyes." Mr. J. Ferguson (bass) will present three Scottish ballads. Some interesting instrumental trio music will be heard, including Raff's "The Mill." Mr. Harold Riddle (violinist), Mr. P. J. Palmer (cellist), and Mrs. Ernest Drake (studio pianiste) will each contribute solo items. Miss Molly Gallagher will recite "The Tomb of Napoleon," and, in addition, humorous numbers.

and expression, was so predominantly artistic that it won for him the admiration of several conductors present, and was also the reason for his being appointed to play first flute in symphony and operatic orchestras under the eminent conductors Lombardi, Barrell, Grandi, and Marzano.

Signor Truda has toured Australia and New Zealand as flautist and conductor, being associated in concerts with Madame Calve, Blanch Arral, Rosina Buckman, Lipowska, Philip Newbury, and numerous others. He was flautist in the New Zealand International Exhibition Orchestra, and during an afternoon chamber concert given by Alfred Hill, Cyril Monk, Gladstone



Bell, and himself, Madame Blanch Arral, the prima donna, who was touring New Zealand at that time, heard Mr. Truda play, and although she had a flautist, made special application to the president of the exhibition and the conductor to release Mr. Truda for a particular concert in Christchurch. At the conclusion of the concert Madame presented him with a gold pencil as a memento.

Signor Truda has had very wide experience in every branch of the profession, having played and conducted in grand opera, comic opera, symphony orchestras, concerts, vaudeville, and while in Wellington, he has conducted at the King's, His Majesty's, the Tivoli Opera House, and Queen's Theatre, etc.

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Full Programmes for Next

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Sunday, September 2

1YA, AUCKLAND (333 METRES), SUNDAY, SEPTEMBER 2.

- 9 a.m.: Result of All Blacks match in South Africa.
 3 p.m.: Afternoon session, selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Selected studio items.
 4.30: Close down.
 6.0: Children's song service, conducted by Uncle Leo, assisted by children from Knox Presbyterian Sunday School.
 6.55: Relay of Service from St. Mary's Cathedral. Preacher, Rev. Percival James. Organist, Mr. Edgar Randall.
 8.30: Relay of Auckland Municipal Band concert, military band selections. Conductor, Mr. Christopher Smith.
 9.30: God Save the King.

2YA, WELLINGTON (420 METRES), SUNDAY, SEPTEMBER 2.

- 9 a.m. to 9.15 a.m.: Result of Final Test Match, All Blacks v. South Africa.
 3 p.m. to 4.30 p.m.: Afternoon session.
 6.0: Children's Song Service conducted by Uncle Ernest (see "Record" previous issue), assisted by St. Andrew's Choir.
 7.0: Relay of Evening Service of St. Gerard's Redemptorist Church. Organist, Mr. H. Mount; Choirmaster, Mr. P. J. Oakes.
 8.15 (approx.):

Studio Concert Arranged by Mr. Len Barnes.

- Orchestral selection—"Rienzi" (Wagner).
 Duet—Mrs. Alice Harris and Miss Lily Mackie, (a) "He Shall Feed His Flock," from "Messiah" (Handel); (b) "Come Unto Him," from "Messiah" (Handel).
 Cornet solo—"The Holy City" (Adams).
 Tenor—Mr. Arthur Coe, "In Native Worth," from "Creation" (Haydn).
 Elocution—Miss Effie Brice, "The Doom of Stephanus," from "The Sign of the Cross" (Hall Caine).
 Cornet solo—"The Lost Chord" (Sullivan).
 Contralto—Miss Lulu Samson, (a) "Tired Hands" (Sanderson); (b) "Brown Bird Singing" (Wood).
 Duet—Messrs. Arthur Coe and Len Barnes, "So Thou Lifest Thy Divine Petition" (Stainer).
 Band selection—"Martha" (Flotow).
 Elocution—Miss Effie Brice, "Morning Thanksgiving" (Drinkwater).
 Baritone—Mr. Len Barnes, "Ombra Mai Fu" (Handel).
 Orchestral selection—"Coriolan Overture," Part 1 (Beethoven).
 Soprano—Miss Winnie Bryce, (a) "Before the Dawn" (Lang); (b) "Salaam" (Lang).
 Orchestral selection—"Coriolan Overture," Part 2 (Beethoven).
 National Anthem.

3YA, CHRISTCHURCH (306 METRES), SUNDAY, SEPTEMBER 2

- 9 a.m.: Result of All Blacks match in South Africa.
 3 p.m.: Studio concert, selected studio items.
 4.30: Close down.
 5.30: Children's song service, conducted by Uncle David, assisted by children from Oxford Terrace Baptist Sunday School.
 6.30: Relay of evening service from Linwood Baptist Church, Linwood Avenue. Preacher, Rev. A. W. Stuart, B.A. Organist, Mr. W. E. Wilson. Choirmaster, Mr. S. J. P. Grigg, M.Sc.
 7.45 (approx.): Studio programme of selected items.
 8.15 (approx.): Gramophone recital.
 God Save the King.

4YA, DUNEDIN (463 METRES), SUNDAY, SEPTEMBER 2.

- 9 a.m.: Result of All Blacks match in South Africa.
 5.30: Children's song service, conducted by Big Brother Bill, assisted by children from the Central Mission Methodist Sunday School.
 6.30: Relay of evening service from Knox Church.
 8.0: Studio concert.
 9.15: Close down.

Monday, September 3

1YA, AUCKLAND (333 METRES), MONDAY, SEPTEMBER 3.

SILENT DAY.

2YA, WELLINGTON (420 METRES), MONDAY, SEPTEMBER 3.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Close down.
 6.0: Children's session, conducted by Uncle Jeff and Aunt Gwen.
 7.0: News session, market reports, and sports results.
 7.40: Lecturette—Mr. T. Bryce Wilson, "The Care of the Feet."
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—The Orchestra, "Stradella" (Flotow).
 8.9: Soprano solos—Miss Jeanette Briggs, L.A.B., (a) "Moonlight" (Schumann); (b) "Mignon's Song" (Schubert).
 8.15: Instrumental trio—Studio Trio, "Trio" (Saint-Saens).
 8.25: Sketch—Mr. A. Stanley Warwick and Miss Kathleen Shaw, "Wavelengths," from "Ever Ready Plays" (Peach).
 8.35: Baritone solos—Mr. John Prouse, (a) "It Is Enough" (Mendelssohn), (cello obbligato by Mr. Geo. Ellwood); (b) "To Anthea" (Hatton); (c) "Queen of Commemara" (Needham), (by request).
 8.45: Vocal duet—Messrs. Roy Hill and J. M. Caldwell, "The Outpost's Vigil" (Rivers).
 8.49: Instrumental—The Orchestra, "Military Symphony" (Haydn).
 8.59: Weather forecast.
 9.1: Mezzo-contralto solo—Miss Ngaire Coster, "Like to the Damask Rose" (Elgar).
 9.4: Tenor solos—Mr. Roy Hill, (a) "Windy Nights" (Stanford); (b) "Bright is the Ring of Words" (Vaughan Williams); (c) "I Pitch My Lonely Caravan" (Coates).
 9.14: Instrumental—The Orchestra, request number.
 9.22: Vocal quartet—Ariel Singers, "The Message" (Claude Haydon, Mus. Bac. of Lower Hutt).
 9.25: Soprano solo—Miss Jeanette Briggs, L.A.B., "Irish Folk Song" (Foote).
 9.28: Instrumental—The Orchestra, (a) "Legende" (Wieniawski); (b) "Aubade Printiniaire" (Lacombe).
 9.38: Bass solo—Mr. J. M. Caldwell, "Gloaming Song" (Claude Haydon).
 9.41: Sketch for two characters—Mr. A. Stanley Warwick and Miss Kathleen Shaw, "The Reason Why" (Pain).
 9.51: Vocal duet—Miss Jeanette Briggs and Miss Ngaire Coster, "A Christmas Greeting" (Elgar).
 9.54: Instrumental—The Orchestra, "Ballet Music—Meyerbeer's Operas" (Kretschmer).
 10.2: God Save the King.

3YA, CHRISTCHURCH (306 METRES), MONDAY, SEPTEMBER 3.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 6.0: Children's session—"Scatterjoy." A night in the flower markets, quaint and cheerful stories of flower vendors. Flower songs by Cousins Eunice, Margaret, Jean, and Audrey. Birthday greetings. Best weekly verse. Stories for children, little and big. Good-night song, "The Land of Nod," by Cousin Kathleen.
 7.15: News session.
 7.30: Talks on "Books," by Mr. E. J. Bell.
 8.0: Chimes.
 Programme by Christchurch Municipal Band, under conductorship of Mr. A. J. Schnack, and assisting artists.
 8.1: March—Band, "Old Comrades" (Teike).
 8.8: Soprano and tenor duet—The Dolce Duo, "I'll Sing to You" (Thompson).
 Tenor song—Mr. T. G. Rogers, "Mary of Argyll" (Nelson).
 8.16: Instrumental trio—Christchurch Broadcasting Trio, "Molto Allegro" (Mendelssohn).
 8.26: Recitation—Miss Kathleen O'Brien, "The Tramp Musician" (Anon.).
 8.31: Contralto songs—Miss Agnes Richardson, (a) "Bois Epais" (Lully); (b) "A Brown Bird Singing" (Wood).

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- 8.41: Selection—Band, "Maritana" (Wallace).
 8.58: Baritone song—Mr. Fred. Penfold, "She Alone Charmeth My Sadness" (Gounod).
 Soprano song—Miss Hilda Hutt, "Bid Me Discourse" (Bishop).
 9.6: Hymn—Band, "Fierce Raged the Tempest" (Dykes).
 9.13: Weather report.
 9.15: Overture.
 9.20: Tenor song—Mr. T. G. Rogers, "Eleanore" (Taylor).
 Contralto song—Miss Agnes Richardson, "Just a-wearying for You" (Bond).
 9.28: Instrumental trios—Christchurch Broadcasting Trio, (a) "In the Woodland" (Ocki-Albi); (b) "Scherzo" (Schubert).
 9.38: Humorous recitations—Miss Kathleen O'Brien, (a) "Rosie's Relations" (Anon.); (b) "We Can't Think Why" (Weatherley).
 9.44: Cornet solo, with Band—"Titania" (Rimmer).
 9.54: Soprano solo—Miss Hilda Hutt, "Dearest Name, Thy Wondrous Power" (Verdi).
 9.58: Baritone songs—Mr. Fred. Penfold, "King Charles" (White).
 10.4: Waltz—Band, "Gold and Silver" (Lehar), followed by march, "Ravenswood" (Rimmer).
 Announcement.
 Band, "God Save the King."

4YA, DUNEDIN (463 METRES), MONDAY, SEPTEMBER 3. SILENT DAY.

Tuesday, September 4

1YA, AUCKLAND (333 METRES), TUESDAY, SEPTEMBER 4.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Further selected studio items.
 4.25: Sports results.
 5.30: Close down.
 6.0: Children's hour—Uncle George, assisted by St. John's Brownie Pack. Chorus, the Pack, "McNamara's Band." Solo, Brown Owl, "Little Brown Owl." Chorus, "Cradle Song." Letters and birthdays. Chorus, the Pack, "Swinging." Solo, Patty Staley, "Little Drummer Man." Song, Brown Owl, "Tip Toes." Chorus, the Pack, "Sunset." Story-time.
 7.15: News and market reports.
 7.30: Book review.
 8.0: Chimes.
 8.1: Relay of overture from Majestic Theatre Orchestra, under Mr. J. Whiteford-Waugh.
 8.11: Tenor solo—"Drinking Song" ("Rose of Persia"), Mr. C. Suisted.
 8.15: Contralto solo—Madame Irene Ainsley, "There's a Land" (Allitsen).
 8.19: Instrumental trio—The Auckland Trio, "Scherzo" from "First Trio" (Reissiger).
 8.28: Baritone solo—Mr. John Hogan, "The Harvester's Night Song" (Martin).
 8.32: Cornet solo—"O Sole Mio" (Di Capua).
 8.36: Soprano solo—Miss Violet Harrison, "Morning" (Speaks).
 8.40: Violin solo—Miss Ina Bosworth, "First Movement" from "Symphonie Espagnole" (Lalo).
 8.45: Talk on Old New Zealand—Mr. A. B. Chappell, M.A., "Selwyn and Pattison."
 9.0: Relay of musical interlude from Majestic Theatre Orchestra.
 9.8: Tenor solo—Mr. C. Suisted, "Give Me Youth and a Day" (Brown).
 9.12: Cornet solo—"Mattinata" (Leoncavallo).
 9.16: Contralto solo—Madame Irene Ainsley, "Happy Song" (Del Riego).
 9.20: Instrumental trio—Auckland Trio, selection from "Tannhauser" (Wagner).
 9.28: Presentation of excerpts from "Orpheus" (Gluck), produced under the direction of Madame Irene Ainsley.

Cast:

- Orpheus Madame Irene Ainsley
 Euridice Miss Violet Harrison
 Amor (God of Love) Miss Beryl Adams
 Chorus—"Here, Where All Is Dark and Silent."
 Contralto aria and recitative—"Weeping, I Stray."
 Soprano aria—"The Gods, They Call Me."
 Contralto aria—"Away with Mourning."
 Chorus—"From these Realms."
 Soprano aria and chorus—"On these Meadows."
 Soprano and contralto duet—"Come, Follow Me."
 Contralto aria, "Che Faro."
 Finale and chorus—"The God of Love Has Prevailed."

2YA, WELLINGTON (420 METRES), TUESDAY, SEPTEMBER 4.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Close down.
 6.0: Children's session, conducted by Big Brother Jack.
 7.0: News session, market reports, and sports results.
 7.40: Lecturette 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—The Orchestra, "Raymond" (Thomas).
 8.11: Vocal duet—Mrs. Alice Harris and Mr. Len Barnes, "Dancing Honey-moon" (Braham).
 8.15: Pianoforte solo—Miss Gertrude Long, "Polka de la Reine" (Raff).
 8.21: Tenor solo—Mr. Arthur Coe, "I Looked into your Garden" (Wood).
 8.24: Hawaiian orchestral selection—Hilo Hawaiian Orchestra, "Hawaiian Orchestra, "Hawaiian Nights" (Waltz), (Lee S. Roberts), (H.M.V. record EA 310).
 8.28: Recitals—Mr. Lionel Inch, (a) "The Highwayman" (Noyes); (b) "Lamentations of a Commercial Traveller" (Anon.).
 8.36: Contralto solo—Miss Lily Mackie, "Just a-wearyin' for You" (Bond).
 8.40: Hawaiian orchestral selection—Hilo Hawaiian Orchestra, "Aloma" (Bowers), (H.M.V. record EA 310).
 8.44: Vocal quartet—Orpheus Quartet, "Who That Knows?" (German).
 8.47: Instrumental—The Orchestra, "Ballet Egyptien" (Luigini).
 8.59: Weather forecast.
 9.1: Soprano solo—Mrs. Alice Harris, "On the March" (Oliver).
 9.4: Instrumental—The Orchestra, request number.
 9.12: Tenor and quartet—Mr. Arthur Coe and Orpheus Quartet, "Come Back to Me" (Hayward).
 9.16: Grand organ selection—Edwin H. Lemare, "Chant de Bonheur" (Song of Happiness), (Lemare), (Zonophone record EE 93).
 9.20: Baritone solos—Mr. Len. Barnes, (a) "So Perverse" (Bridge); (b) "Pirate Song" (Gilbert); (c) "Five Eyes" (Gibbs); (d) "Roadways" (Densmore).
 9.32: Instrumental—The Orchestra, "Maid of the East" (Morgan).
 9.42: Recitals—Mr. Lionel Inch, (a) "The Dandy Fifth" (Glassaway); (b) "British Workmen's Rights" (Anon.).
 9.49: Vocal quartet—Orpheus Quartet, "Good-night Song" (Walford Davies).
 9.52: Instrumental—The Orchestra, dance numbers.
 10.2: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—TUESDAY, SEPTEMBER 4.

SILENT DAY.

4YA, DUNEDIN (463 METRES)—TUESDAY, SEPTEMBER 4.

- 3 p.m.: Town Hall chimes.
 3.1: Gramophone concert.
 4.0: Address on "Art Needlework," by Miss Marguerite Puchegud (under the auspices of the King Edward Technical College).
 4.15: Gramophone music.
 4.25: Sports results.
 4.30: Close down.
 6.0: Town Hall chimes.
 6.1: Children's session, conducted by Big Brother Bill—"Happy Folks' Anthem." Riddles, jokes and greetings. Item by the MacAndrew Road School Choir. Story for the chickabiddies. Item by the choir. Letters and birthdays. Item by the choir. A travel talk, "Up on the Roof of the World," by Big Brother Bill. Item by the choir. National Anthem.

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- 7.15: News session.
 7.30: Address on "Tourist Resorts," by Mr. R. W. Marshall, of the Government Tourist Department.
 8.0: Town Hall chimes.
 8.1: Orchestral overture.
 8.10: Baritone solos—Mr. R. B. Macdonald, (a) "Rip Van Winkle" (Carroll); (b) "The Sailor's Paradise" (Richards).
 8.17: Violin solo—Miss Eva Judd, "Gavotte in E" (Kreisler-Bach).
 8.22: Bass solo—Mr. E. G. Bond, "Harlequin" (Sanderson).
 8.25: Humorous recital—Mr. Allan Young, "Levinsky the Politician" (Rose).
 8.32: Trombone solos—Mr. R. B. Hall, (a) "Friend o' Mine" (Sanderson); (b) "Berceuse de Jocelyn" (Godard).
 8.39: Contralto solo—Miss Wyn McPeak, "The Bitterness of Love" (Dunn).
 8.42: Pianoforte solo—Miss Alice Wilson, F.T.C.L., selected.
 8.47: Tenor and baritone duet—Messrs. Chas. Edwards and R. B. Macdonald, "The Moon Hath Raised Her Lamp" (from "Lily of Killarney"), (Benedict).
 8.51: Tenor solo—Mr. Chas. Edwards, "Nightfall at Sea" (Phillips).
 8.55: Weather forecast.
 8.58: Recitals—Miss Nancy Ayson, (a) "Of Course" (Anon); (b) "Rebecca" (Belloc).
 9.7: Bass solos—Mr. E. G. Bond, (a) "Devonshire Cream and Cider" (Sanderson); (b) "The Pirate" (Turner-Malley).
 9.13: Violin solos—Miss Eva Judd, (a) "Ballet Music from Rosamund" (Schubert-Kreisler); (b) "Cavatina" (Bohm).
 9.22: Contralto solos—Miss Wyn McPeak, (a) "In an Old-Fashioned Town" (Squire); (b) "The Wind" (Spross).
 9.27: Humorous stories—Mr. Allan Young.
 9.37: Trombone solo—Mr. R. B. Hall, "In Cellar Cool" (arr. Rimmer).
 9.43: Tenor solos—Mr. Chas. Edwards, (a) "Spirit Flower" (Tipton); (b) "They Say" (Evans).
 9.50: Pianoforte solos—Miss Alice Wilson, selected.
 9.56: Recital—Miss Nancy Ayson, "The Quaker Sinner" (Anon).
 10.0: Close down.

Wednesday, September 5

1YA, AUCKLAND (333 METRES)—WEDNESDAY, SEPTEMBER 5.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Further selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour—Uncle Tom. Opening chorus. Story for tiny tots. Piano solo, Cousin Elsie, "Rustle of Spring" (Greig). Letters and birthdays. Record. Song, Uncle Tom. Piano solo, Cousin Elsie, "The Bells." Story-time, Uncle Tom. Closing chorus.
 7.15: Talk by Gargoyle, "Valves and Valve Gumming."
 7.30: News and market reports.
 8.0: Chimes.
 8.1: Relay of concert by the Auckland Municipal Band, under the conductorship of Mr. C. Smith, assisted from the studio by the following artists:—

- Baritone solos—Mr. F. Sutherland, (a) "The Fortune Hunter" (Willeby); (b) "Time to Go" (Sanderson); (c) "Beating up the Channel" (Sanderson).
 Recitations—Mr. Allan McSkimming, (a) "The Field of Waterloo" (Byron); (b) "The Difference" (Reynolds); (c) "When Father Rode the Goat."
 10.0: God Save the King.

2YA, WELLINGTON (420 METRES), WEDNESDAY, SEPTEMBER 5.

- 3 p.m.: Relay description of first Test match, New Zealand versus New South Wales, from Athletic Park. (Announcer, Mr. Chas. Lamberg).

3YA, CHRISTCHURCH (306 METRES), WEDNESDAY, SEPTEMBER 5.

- 2.45 p.m.: Rebroadcast of 2YA, description of first Test, New South Wales v. New Zealand.
 3 p.m.: Afternoon session—Selected studio items.
 6.0: Children's session—Stories for the girls and boys, Uncle Jack. Songs by Cousin Edythe, (a) "Arcadian Lullaby"; (b) "Pucker Up and Whistle." Recitations and duologues by the "Three Old Maids of Lee." Birthday greetings. Good-night song, "Just a Song at Twilight."
 7.15: Addington stock market reports.
 8.0: Chimes.
 8.1: Rebroadcast from 1YA (conditions permitting).
 8.6: Baritone songs—Mr. A. G. Thompson, "You Loved the Time of Violets" (Lohr); (b) "Eyes that Used to Gaze in Mine" (Lohr).
 8.12: Pianoforte solo—Miss Aileen Warren, "At Thy Casement" (Mariani).
 8.16: Soprano songs—Mrs. C. L. Crowley, (a) "Thou Art Like a Lovely Flower" (Schumann); (b) "A Spring Night" (Schumann).
 8.21: Cornet solo—Mr. S. J. Creagh, "Star of England" (Polka), (Brewer).
 8.26: Tenor song—Mr. Frank Morrison, "On With the Motley" (Leon-cavallo).
 8.30: Instrumental trios—Christchurch Broadcasting Trio, "Poco Adagio" and "Rondo All'ongarese" (Haydn).
 8.38: Contralto solo—Miss Nellie Lowe, "Softly Awakes My Heart" (Saint-Saens).
 8.42: Recitation—Miss Naare Hooper, "Balcony Scene" from "Romeo and Juliet" (Shakespeare).
 8.48: Bells—"Dance California" (Gregory).
 8.52: Contralto and baritone duet—The Dulcet Duo, "Barcarolla" (Gounod).
 8.56: Weather report.
 8.58: Overture.
 9.6: Baritone songs—Mr. A. G. Thompson, (a) "Tally Ho" (Leoni); (b) selected.
 9.13: Pianoforte solo—Miss Aileen Warren, "Widmung" ("Devotion"), (Schumann).
 9.19: Soprano songs—Mrs. C. L. Crowley, "Wings" (d'Hardelot); (b) "Open Thy Blue Eyes, My Beloved" (Massenet).
 9.23: Cornet solo—Mr. S. J. Creagh, "Miranda" (Code).
 9.28: Humorous recitation—Miss Naare Hooper, cautionary tale, "Jim" (Belloc).
 9.32: Instrumental trio—Christchurch Broadcasting Trio, "Angels Guard Thee" (Godard).
 9.41: Contralto song—Miss Nellie Lowe, "Hindoo Song" (Bemberg).
 9.45: Xylophone solo—H.M.V. record, "Heather Bells" (Losey).
 9.49: Tenor songs—Mr. Frank Morrison, (a) "At Dawning"; (b) "Oh Lovely Night" (Ronald).
 Announcement.
 God Save the King.

4YA, DUNEDIN (463 METRES), WEDNESDAY, SEPTEMBER 5.

- 7 p.m.: Town Hall chimes.
 7.1: Request gramophone concert.
 7.40: News session—Burnside stock report.
 8.0: Town Hall chimes.
 8.1: Relay of orchestral overture from the Octagon Theatre Orchestra, under the direction of Monsieur Henri de Rose, Mus.Bac.
 8.11: Musical comedy songs—Miss Jacqueline Burke, (a) "D'Ye Love Me?" (Kern); (b) "Two Little Blue Birds" (Kern).
 8.18: Jazz piano solo—Mr. T. V. Anson, "Mama's Gone Young" (Weston).
 8.23: Humorous Scottish song and patter—Mr. J. Paterson, "I Belong to Glasgow" (Fyffe).
 8.28: Humorous sketch—Miss Billie Lorraine and Major F. H. Lampen, selected.
 8.37: Piano-accordion solos—Mr. E. Heeney, (a) "O Solo Mio" (Di Capua); (b) "Proud Maisie."
 8.43: Humorous songs at the piano—Miss Eileen Cooper, (a) "Oh, the Waltz" (Brunnell); (b) "The Egg" (Newman).
 8.50: Guitar duet—Messrs. Tyrie and Maitland, "Pua Carnation."
 8.53: Popular song-hit—Mr. Billy Gay, "Just Like a Fool" (Philwin).
 8.58: Weather forecast.
 9.0: Relay of orchestral music from the Octagon Theatre.
 9.10: Popular song—Miss Jacqueline Burke, "Thru the Night" (Logan).
 9.14: Jazz piano solo—Mr. T. V. Anson, (a) "Sleepy Blues" (Dean); (b) "Me and My Shadow" (Dreyer).
 9.22: Humorous Scottish songs—Mr. J. Paterson, (a) "Soosie McLean" (Lauder); (b) "The Hieland Jazz" (Fyffe).

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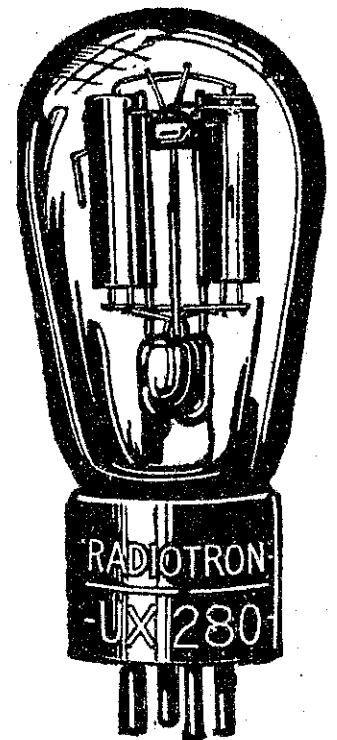
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- 9.30: Piano accordion solo—Mr. E. Heaney, "A Lane in Spain" (Lewis).
 9.34: Humorous song at the piano—Miss Eileen Cooper, "Naughty Little Word" (North).
 9.38: Humorous sketch—Miss Billie Lorraine and Major Lampen, selected.
 9.44: Guitar duets—Messrs. Tyrie and Maitland, (a) "Hilo March"; (b) "Kawaihan Waltz."
 9.51: Popular song-hits—Mr. Billy Gay, (a) "Weary" (Whiting); (b) "Gee! But I'm Lonesome for You" (Cohn).
 10.0: Close down.

Thursday, September 6

1YA, AUCKLAND (333 METRES), THURSDAY, SEPTEMBER 6.

- 3 p.m.: Afternoon session—Selected studio items.
 3.30: Talk by representative of Auckland Gas Company on "Gas Cooking."
 3.45: Further studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour—Peter Pan. Piano solo, Cousin Lorna, "Grillen" (Schumann). Song, Cousin Jean, "I've Got the Mumps." Letters and birthdays. Piano solo, Cousin Lorna, "Kindergarten Pieces." (Schumann). Sketch, Peter Pan and Cinderella, "Climbing Ruapehu." Song, Cousin Jean, "Jolly Little Eskimo." Story-time.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: Orchestral—"A Musical Switch" (Alford).
 8.10: Opening chorus and quartet—The Clarion Quartet, "Annie Laurie" (Parkes).
 8.15: Bass solo—Mr. Duncan Black, "The Norseman's Battle Song" (Collisson).
 8.19: Hawaiian Orchestra—"Moana Chimes" (Costello).
 8.23: Vocal quartet—Misses A. McGruer and B. Smith, "Island of the Purple Sea" (Gheel).
 8.27: Instrumental trio—Auckland Trio, "Andante and Scherzo" (Mendelssohn).
 8.36: Tenor solo—Mr. J. Simpson, "Ninetta" (Brewer).
 8.40: Piano solo—Mr. Cyril Towsey, "The Wanderer" (Schubert-Liszt).
 8.44: Vocal and humour—The Asquiths, "Thirty Minutes' Drawing-Room Entertainment."
 9.14: Weather report and forecast.
 9.15: Orchestral—"The Dollar Princess Selection" (Fall).
 9.22: Soprano solo—Miss A. McGruer, "Yellow Slippers" (Clarke).
 9.26: Wurlitzer organ. (a) "In a Persian Market" (Ketelby); (b) "In a Monastery Garden" (Ketelby).
 9.33: Vocal quartet—The Clarion Quartet, (a) "'Cause I'd Nothing Else to Do"; (b) "April and November" (Parkes).
 9.38: Instrumental trio—Auckland Trio, "Handel in the Strand" (Grainger).
 9.46: Vocal duet—Messrs. J. Simpson and D. Black, "Beauty's Eyes" (Tosti).
 9.50: Hawaiian instrumental—"Under the South Sea Palms" (Parish).
 9.53: Contralto solo—Miss Beryl Smith, "The Reason" (Del Riego).
 9.57: Vocal quartet—The Clarion Quartet, "Life's Lullaby" (Lane).
 10.1: God Save the King.

2YA, WELLINGTON (420 METRES)—THURSDAY, SEPTEMBER 6.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Close down.
 6.0: Children's session, conducted by Aunt Gwen, assisted by pupils of Mrs. M. A. Thomas.
 7.0: News session, market reports, and sports results.
 7.40: Lecturette—Miss M. S. Christmas, "Cats and Their Care."
 8.0: Chimes of the G.P.O. clock.
 Studio concert by the Central Mission Band, assisted by 2YA artists.
 8.1: March—Band, "Pomp and Pageant" (Anderson).
 8.5: Vocal quartet—Mellow Fellows, "Souvenirs" (Nicholls).
 8.8: Selection—Band, "The Magic Flute" (Mozart), (by request).
 8.17: Baritone solo—Baritone Fellow, "Star of My Soul" (Jones).
 8.20: One-act comedy, Mr. J. F. Montague and Miss Edna Purdie, "A Perfect Pair."
 8.35: Waltz—Band, "Love and Laughter" (Pecroni).
 8.41: Interlude—Two Fellows, "Constabulary Duty" (Sullivan).
 8.44: March—Band, "Old Comrades" (Teike).
 8.48: Novelty song—Talkative Fellow, "To-night's My Night With Baby" (Albert).
 8.51: Fantasia—Band, "Musical Fragments" (Round).
 8.59: Weather forecast.
 9.1: Lecturette—Mr. Johannes Andersen, "Native Birds."
 9.13: Bass solo—Bass Fellow, "To-morrow" (Keel).
 9.16: Euphonium solo—Mr. W. Baker, "The Village Blacksmith" (Round).
 9.22: Recitals—Mr. J. F. Montague, (a) "Thomas Atkins"; (b) "The Wedding Day."
 9.30: Vocal quartet—All the Mellow Fellows, "Since You Whispered I Love You" (Coslow).
 9.33: Selection—Band, "La Sonnambula" (arr. Rimmer), (by request).
 9.42: Tenor solo—Tenor Fellow, "Open Thy Blue Eyes" (Massenet).
 9.45: Novelty—The Funny Fellow, "When the Red Red Robin" (Albert).
 9.48: Hymn—Band, "Rock of Ages" (Redhead).
 9.52: Baritone solo—The Baritone Fellow, "That Old Bush Shanty of Mine" (O'Hagan).
 9.55: Vocal quartet—Mellow Fellows, "Kentucky Lullaby" (Miller).
 9.58: March—Band, "Myaka" (Hitchen).
 10.2: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—THURSDAY, SEPTEMBER 6.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 6.0: Children's session—"How-do-you-do." Chuckle and Aunt Pat. Birthday verses. Recitations by Cousin Eunice. Songs by Cousin Molly. Stories, "The Young Fur Traders," "Alice in Wonderland." Birthday greetings. Story of the "Nutcracker Suite," by Chuckle. Good-night chorus by The Company.
 7.15: News session.
 7.30: Talk by a member of the Canterbury Progress League.
 8.0: Chimes.
 Instrumental and vocal programme of German composers.
 8.1: Rebroadcast of 2YA (conditions permitting).
 8.6: Tenor and contralto duet—Grand Opera Duo, "On Wings of Song" (Mendelssohn).
 Soprano songs—Madame Gower-Burns, "The Almond Tree" (Schumann), "Make Haste" (Dessaner).
 8.16: Violin solos—Miss Irene Morris, "Song Without Words" (Mendelssohn), "Waltz in A Major" (Brahms).
 8.24: Baritone song—Mr. Clive Hindle, "I Will Not Grieve" (Schumann).
 8.28: Instrumental trio—Christchurch Broadcasting Trio, "Allegro From Trio in E Flat" (Beethoven).
 8.37: Contralto song—Mrs. Ann Harper, "The Fisher" (Schubert).
 8.41: Shakespearian recitation—Miss Dorothy Jenkin, "Portia's Mercy Speech" (Merchant of Venice), (Shakespeare).
 8.46: Flute solos—Mr. W. Hay, (a) "Serenade—je me Souviens" (Wilcocks); (b) "Valse des Sylphes" (Faust), (Berlioz).
 8.53: Soprano and baritone duet—Grand Opera Duo, "Greeting" (Mendelssohn).
 8.57: Weather report.
 8.59: Overture.
 9.0: Tenor song—Mr. Harold Prescott, "The Garland" (Mendelssohn).
 Soprano songs—Madame Gower-Burns, "The Lonely Rose" (Hermes); (b) "The Tear" (Rubenstein).
 9.15: Instrumental trios—Christchurch Instrumental Trio, (a) "Entract from Rosamund" (Schubert); (b) "Moment Musical" (Schubert).
 9.23: Baritone songs—Mr. Olive Hindle, (a) "Litany" (Schubert); (b) "Dreaming" (Schumann).
 9.30: Flute solo—Mr. W. Hay, "Adagio—1st Concerto" (Mozart).
 9.37: Contralto song—Mrs. Ann Harper, "The Sandman" (Brahms).
 Tenor song—Mr. Harold Prescott, "When Through the Piazzetta" (Mendelssohn).
 9.44: Celeste solos—Columbia record, (a) "The Bees' Wedding" (Mendelssohn); (b) "Humoreske" (Dvorak).
 9.52: Recitation—Miss Dorothy Jenkin, "The Glory of the Garden."
 9.57: Vocal quartet—Grand Opera Quartet, "The Wood Minstrels" (Mendelssohn).
 Announcement. God Save the King.

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4YA, DUNEDIN (463 METRES)—THURSDAY, SEPTEMBER 6.

SILENT DAY.

Friday, September 7

1YA, AUCKLAND (333 METRES), FRIDAY, SEPTEMBER 7.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Further studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour—Nod and Aunt Jean. Song, Aunt Jean. Dialogue, "Doll's Party". Letters and birthdays. Duet, Aunt Jean and Aunt Pearl. General Gerald, "Animal Imitations." Recitation, Cousin Gwenyth, "Burton's Curtains." Bedtime stories. Song, Aunt Jean, "Good-night."
 7.15: Lecture—Major J. A. Cowper, "Aviation."
 8.30: News and market reports.
 8.0: Chimes.
 8.1: Orchestral, "The Merry Wives of Windsor" (Nicolai).
 8.8: Vocal quartet—Madame Mary Towsey's Quartet, "Sympathy" (Friml).
 8.12: Instrumental trio—Auckland Trio, "Allegro from Trio in F" (Gade).
 8.20: Baritone solo—Mr. John Bree, "Lady Mine" (Lohr).
 8.23: Vocal and Instrumental—The Bohemian Trio, (a) "Blue Mountain Home" (Robinson); (b) "Ramona" (Wayne).
 8.30: Contralto solo—Miss Edna Peace, "Dawn" (Curran).
 8.34: Humour—Mr. J. F. Montague, "My Early Loves."
 8.40: Tenor solo—Mr. J. McDougall, "My Heart is a Haven" (Steinet).
 8.44: 'Cello solo—Miss M. Wright, selected.
 8.49: Soprano solo—Madame Mary Towsey, "Ave Maria" (Mascagni).
 8.53: Weather forecast.
 8.54: Novelty—The Wizard, "Word Wangles."
 9.14: Vocal duet—Messrs. Bree and McDougall, "The Battle Eve" (Bonheur).
 9.18: Orchestral—"Hungarian Rhapsody, No. 6" (Liszt).
 9.25: Contralto solo—Miss E. Peace, "Where the Great Ships Ride" (Sanderson).
 9.29: Humour—Mr. J. F. Montague, (a) "The Showman"; (b) "Three Stories."
 9.38: Baritone solo—Mr. J. Bree, "The Floral Dance" (Moss).
 9.42: Vocal and instrumental—The Bohemian Trio, (a) "Magnolia" (Henderson).
 9.49: Tenor solo—Mr. J. McDougall, "I'll Sing Thee Songs of Araby" (Clay).
 9.53: Instrumental Trio—Auckland Trio, "Norwegian Dance" (Grieg).
 10.0: Vocal quartet—Madame Mary Towsey's Quartet, "Sweet and Low" (Barnby).
 10.4: God Save the King.

3YA, WELLINGTON (420 METRES)—FRIDAY, SEPTEMBER 7.

- 3 p.m.: Chimes of the G.P.O. clock.
 8.1: Selected gramophone items.
 4.30 and 4.55: Sports results.
 5.0: Close down.
 6.0: Children's session, conducted by Uncle Ernest, assisted by Cousins from Thorndon Normal School (under Mr. Tremewan).
 7.0: News session, market reports and sports results.
 7.40: Lecturette—Colonel F. Burton Mabin, "The Thrills of Sword Fishing."
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—The Orchestra, "William Tell" (Rossini).
 8.11: Contralto solo—Miss Madge Freeman, "Well-a-Day" (Martin).
 8.15: Recital—Mr. Barton Ginger, "Como" (Miller).
 8.22: Instrumental trios—Studio Trio, (a) "Air" (Schumann); (b) "The Return" (Bizet).
 8.32: Tenor solo—Mr. Edwin Dennis, "Take a Pair of Sparkling Eyes" (Sullivan).
 8.36: Operatic selection—The Orchestra, "Il Trovatore" (Verdi).

- 8.46: Vocal duet—Miss Madge Freeman and Mr. Edwin Dennis, "Night of Stars, Night of Love" (Offenbach).
 8.50: Soprano solo—Mrs. Ellison Porter, "Vale" (Kennedy Russell).
 8.54: Instrumental—The Orchestra, request number.
 9.2: Weather forecast.
 9.4: Vocal trio—Philharmonic Trio, "Secret" (Cadman).
 9.8: Pianoforte solos—Miss Joyce Downing, (a) "Hungarian Rhapsody No. 11" (Liszt); (b) "Golliwog's Cake Walk" (Debussy).
 9.16: Contralto solo—Miss Madge Freeman, "Sweet Early Violets" (Sherrington).
 9.20: Tenor solos—Mr. Edwin Dennis, (a) "O Could I But Express" (Malasikin); (b) selected.
 9.26: Instrumental—The Orchestra, "Pagliacci" (Leoncavallo).
 9.36: Vocal duet—Mrs. Ellison Porter and Miss Madge Freeman, "Ghosts of Little White Roses" (Rich).
 9.40: Recitals—Mr. Barton Ginger, (a) "First Appearance at Odeon Theatre of Nichols Tacchenardi" (Fields); (b) "The Three Trees" (Powell).
 9.48: Soprano solo—Mrs. Ellison Porter, "Carmena" (Lane Wilson).
 9.52: Musical comedy selection—The Orchestra, "Lilac Time," Part 2 (Schubert-Clutsam).
 10.2: God Save the King.

3YA, CHRISTCHURCH (306 METRES), FRIDAY, SEPTEMBER 7.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session, conducted by Big Brother—Story for the tiny tots, "Adventures of Peter Rabbit," by Big Brother. Chorus by girls from St. Saviour's Orphanage, "Farewell, London Town." Recitation by Cousin Audrey, "The Lamplighter." Humorous stories and sketch, Cousins Maisie and Voice. Birthday greetings. Song, Cousin Rhoda, "Robin Adair." Fairy tales in story and music by Miss Arpeggio. Story for the bigger boys, by Big Brother. Choruses by girl cousins, "Shepherd's Song" and "Pilgrim's Chorus."
 7.15: News session.
 8.0: Chimes.
 8.1: Overture (rebroadcast of 2YA, Wellington, conditions permitting). The Melodious Four will present the song cycle, "Flora's Holiday" (Lane Wilson), with instrumental accompaniment.
 8.6: Vocal quartet—Melodious Four, "Come All Ye Lads and Lassies" (Lane Wilson).
 Soprano solo—Miss Frances Hamerton, "Love's Greeting" (Lane Wilson).
 Tenor solo—Mr. Russel Sumner, "Tell Me, Charming Creature" (Lane Wilson).
 Vocal quartet—Melodious Four, "Gentle Dawn" (Lane Wilson).
 'Cello solos—Mr. Harold Beck, "Aria" and "Danse Rustique" (Matheson-Squire).
 Vocal quartets—Melodious Four, "The Country Dance"; "Maidens, Beware Ye" (Lane Wilson).
 Baritone solo—Mr. T. D. Williams, "Sound Judgment" (Lane Wilson).
 Vocal quartet—Melodious Four, "The Pedlar" (Lane Wilson).
 Vocal quartet—Melodious Four, "The Commotion of Love" (Lane Wilson).
 8.38: Violin, flute and harp trios—electrically reproduced records, (a) "Herd Girl's Dream" (Labitzky); (b) "Love in Idleness" (Macbeth).
 8.48: Popular song at piano—Mr. Jock Lockhart, "The Message" (Cruickshank).
 8.52: Instrumental trios—Christchurch Broadcasting Trio, (a) "Ave Maria" (Schubert); (b) "Pierrette" (Chaminade).
 9.0: Weather forecast.
 9.2: Overture.
 9.7: Soprano solos—Miss Frances Hamerton, (a) "The Organgrinder's Song" (Carey); (b) "April Children" (Carey).
 Tenor solos—Mr. Russell Sumner, (a) "Go, Lovely Rose" (Quilter); (b) "The Last Watch" (Pinsuti).
 9.18: Chinese one-step—Willyams Dance Band, "Chingy Wingy" (Williams).
 9.22: Popular songs at piano—Mr. Jack Lockhart, "Osh Kosh" (Francis).
 9.26: Contralto solos—Miss Belle Renaut, (a) "Setting Sun" (Peel); (b) "Cuckoo Clock" (Schaefer).
 9.30: Foxtrot—Willyams Dance Band, "Sweet Ella May" (Renaud), with vocal refrain by Mr. W. A. West.
 9.35: Saxophone duet—Messrs. G. Wilkinson and H. Bamfield, "La Paloma" (Yradia).
 9.40: Baritone plantation songs with choruses—Mr. T. D. Williams and the Melodious Four, (a) "De Old Banjo" (Scott Gatty); (b) "Good Night" (Scott Gatty).
 Dance music till 11 p.m.
 11.0: God Save the King.

4YA, DUNEDIN (463 METRES), FRIDAY, SEPTEMBER 7.

- 3 p.m.: Town Hall chimes.
 3.1: Gramophone concert.
 3.30: Afternoon tea music relayed from the Savoy.
 3.45: Studio music.
 4.0: Relay of music from the Savoy.
 4.15: Gramophone music.
 4.25: Sports results.
 4.30: Close down.



- 6.0: Town Hall chimes.
 6.1: Children's session—Aunt Sheila and Big Brother Bill, "Happy Folks' Anthem." Riddles, jokes and greetings. The musical part of the programme will be provided by the Moray Place School. National Anthem.
 7.15: News session.
 7.30: Review of latest books—Mr. H. Greenwood, Librarian of the Dunedin Athenaeum.
 8.0: Town Hall chimes.
 8.1: Orchestral selection.
 8.10: Contralto solos—Miss Dorothy Skinner. (a) "Four by the Clock" (Malinson); (b) "Off in the Twilight" (Tate).
 8.16: Cornet solo—Mr. D. J. Robertson, "Zanette" (Code).
 8.21: Bass solo—Mr. Neil Black, "Aileen Marie" (Adams).
 8.25: Pianoforte solo—Mrs. Ernest Drake, "Liebestraume, No. 3" (Liszt).
 8.29: Flute solo—Mr. Chas. E. Gibbons, "La Fille du Regiment" (Donizetti).
 8.35: Contralto solo—Miss Dorothy Skinner, "Sunrise and Sunset" (Spross).
 8.38: Cornet solos—Mr. D. J. Robertson, (a) "Un Peu d'Amour" (Silesu); (b) "Parted" (Tosti).
 8.45: Bass solos—Mr. Neil Black, (a) "Soul of Mine" (Barnes); (b) "The Merry Monk" (Bevan).
 8.52: Flute solo—Mr. Chas. E. Gibbons, "Silvery Sands" (Howgill).
 8.58: Weather forecast.
 9.0: An hour's dance music relayed from the Savoy by Alf Carey and his orchestra.
 10.0: Close down.

Saturday, September, 8

1YA, AUCKLAND (333 METRES), SATURDAY, SEPTEMBER 8.

- 2.45 p.m.: Relay description of Rugby football match, Auckland v. Wanganui. Announcer, Mr. W. J. Meredith.
 4.30: Close down.
 6.0: Children's hour—Conderella. Song, Cinderella, "The Best Friend" (German). Hone Wiri, Maori songs with ukulele. Letters and birthdays. Uncle Peter, humorous talk. Hone Wiri, Maori songs with ukulele. Bedtime stories. Hone Wiri, war-cry and haka.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: Relay of overture from Prince Edward Theatre Orchestra, under Mr. E. Beacham.
 8.11: Baritone solo—Mr. S. Pritchard, "Onway Awake" (Cowen).
 8.15: Humorous sketch—The Griffiths Duo, "For Humanity's Sake."
 8.21: Saxophone solo—"Saxanola" (Doerr).
 8.25: Soprano solo—Miss C. Ormiston, "Orpheus with his Lute" (Sullivan).
 8.29: Concert zither—Mr. W. Ungemuth, "Under the Palm Tree" (Rivner).
 8.33: Baritone solos—Mr. S. Pritchard, (a) "Invictus" (Huhn); (b) "Banjo Song" (Homer).
 8.41: Relay of entracte from Prince Edward Theatre Orchestra.
 8.51: Humorous sketch—The Griffiths Duo, "Popular Marriages."
 8.57: Weather forecast.
 8.58: Saxophone solo, "Valse Hilda" (Doerr).
 9.2: Soprano solos—Miss C. Ormiston, (a) "Love's a Merchant" (Carew); "Pipes of Pan" (Moncton).
 9.10: Concert zither, Mr. W. Ungemuth, (a) "Gambrinus March" (Kellner); (b) "Dawn of Spring" (Eckerskorn).
 9.17: Relay of dance music from Dixieland Cabaret Orchestra, under Mr. H. Neilson.
 11.0: God Save the King.

2YA, WELLINGTON (420 METRES)—SATURDAY, SEPTEMBER 8.

- 3 p.m.: Relay description of representative football match from Athletic Park—Wellington v. Hawke's Bay.
 6.0: Children's session—Uncle Toby, Aunt Gwen and pupils of Mrs. Martyn Williams.
 7.0: News session—Market reports and sports results.
 7.40: Lecturette—Professor Hunter, "The W.E.A. Summer School."
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—The Orchestra, "Caliph of Baghdad" (Boieldien).
 8.9: Vocal quartette—Melodie Four, "Slow River" (Schwab), (by request).
 8.13: Hawaiian orchestral selection—Hilo Hawaiian Orchestra, "Sweet Hawaiian Dream" (waltz), (Arthur Coleman). H.M.V. Record B2328.
 8.17: Tenor solos—Mr. Sam Duncan, (a) "When Other Lips and Other Hearts" (Balfe); (b) "At Dawning" (Cadman).
 8.24: Instrumental—The Orchestra, (a) "March of the Tin Soldiers" (Kocket); (b) "Dance of the Rose Elfs" (Moszkowski).
 8.33: Bass solo—Mr. W. W. Marshall, "Voice of the Sea" (Lane Wilson).
 8.37: Humorous sketch—Glad Idlers, "Meetings" (original).
 8.44: Vocal quartet—Melodie Four, "A Catastrophe" (Sprague).
 8.47: Mezzo-soprano solos—Mrs. F. Tunley, (a) "Oh, How Delightful" (Molloy); (b) "The Wood Pigeon" (Lehmann).
 8.53: Instrumental—The Orchestra, request numbers.
 9.1: Weather forecast.
 9.3: Tenor solos—Mr. Frank Bryant, (a) "Only the River Running By" (Hopkins); (b) "Thoughts" (Fisher).
 9.9: Humorous sketch—Glad Idlers, "Lecturettes" (as we know them).
 9.17: Instrumental—The Orchestra, "Jolly Robbers" (Suppe).
 9.25: Quartet—Melodie Four, "A Musical Muddle" (Lewis).
 9.29: Wurlitzer organ solo—Jesse Crawford, "My Blue Heaven" (Donaldson). H.M.V. Record EA284.
 9.33: Baritone solo—Mr. R. S. Allwright, "Father O'Flynn" (Stanford).
 9.37: Instrumental—The Orchestra, (a) "Serenade," from "Les Millions D'Arlequin" (Drigo); (b) "La Paloma" (Yradier).
 9.45: Vocal quartet—Melodie Four, "The Goslings" (Bridge).
 9.48: Instrumental—The Orchestra, dance numbers.
 10.0: Dance programme.
 11.0: God Save the King.

3YA, CHRISTCHURCH (306 METRES), SATURDAY, SEPTEMBER 8.

- 2.45 p.m.: Relay description of Rugby football match from Lancaster Park.
 6.0: Children's session, conducted by Uncle Sam—Stories, jokes and greetings by Uncle Sam. Songs, recitations and music by a group of young internationals.
 7.15: News session.
 8.0: Chimes.
 8.1: Overture.
 8.7: Chorus, followed by bass solo—The Avonion Minstrels and Mr. James Filer, (a) "Nancy" (Scott Gatty); (b) "Dreaming of Homeland" (Ellis).
 8.15: Hawaiian steel guitar and ukulele trios—Miss Elaine Moody's Hawaiian Trio, (a) "Ting a Ling" trio, with vocal refrain by Miss Elaine Moody (MS); (b) "Just a Memory" (MS), with vocal refrain by Miss E. Moody; (c) "Kilima Waltz" (Trio) (MS).
 8.24: Mezzo-contralto solos—Mrs. Sen Jowett, (a) "Flower of My Heart"; (b) "Serenade"; (c) "Invitation to Dance" (three little Mexican songs by Amy Woodford-Finden).
 8.30: Instrumental trios—Christchurch Broadcasting Trio, (a) "Swedish Folk Song" (Evendsen); (b) "Coquette" (Traditeur).
 8.38: Popular Scottish song—Mr. Bracey Wilson, "The Wedding o' Sandy McNab".
 8.43: Serio-comic recital—Mr. L. T. J. Ryan, "Claude" (in Australian dialect), (MS).
 8.48: Negro plantation duet—Messrs. D. Clapperton and F. Olds, "De Lady Moon" (Scott Gatty).
 8.52: Banjolin solo—Mr. Stan. Birch, "Medley—Gems of Erin" (Fletcher).
 8.58: Tenor solos—Mr. Ernest Rogers, (a) "Dear Sleeping Rose" (Hope); (b) "Dreams of Long Ago" (Melody by Caruso).
 9.5: Weather forecast.
 9.7: Overture.
 9.12: Male vocal quartet, followed by popular song—Avonion Minstrels and Mr. D. Clapperton, (a) "Nocturne" (Jones); (b) "Each Little Day" (Gideon).
 9.20: Hawaiian string steel guitar and ukulele trios—Miss Elaine Moody's Hawaiian String Trio, (a) "Hawaii, I'm Lonesome For You" (Trio) (MS); (b) ukulele duet, Miss E. Moody and W. Clancy, with vocal refrain by Miss Moody; "Lo Nah" (MS); (c) guitar duet, Miss E. Moody and W. Clancy, "Hilo March" (MS).
 9.30: Mezzo-contralto solos—Mrs. Sen Jowett, (a) "Interlude" (Martin); (b) "He's Such a Little Fellow" (Dichmont).
 9.43: Instrumental trios—Christchurch Broadcasting Trio, (a) "Minuet in G" (Beethoven); (b) "Russian Mazurka" (Glinka).
 9.42: Popular Scottish song—Mr. Bracey Wilson, "When I Get Back to Bonnie Scotland" (Lauder).
 9.47: Recital—Mr. L. T. J. Ryan, "The Police Brigade" (Thorp).
 9.52: Negro plantation duet—Messrs. E. Rogers and J. Filer, "Hurry Up, Pompey" (Scott Gatty).
 9.58: Banjolin solos, followed by final negro plantation chorus—Mr. Stan. Birch and the Avonion Minstrels, (a) "The Lost Chord" (Sullivan); (b) "Shine, Shine Moon" (Scott Gatty).
 God Save the King.

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4YA, DUNEDIN (463 METRES), SATURDAY, SEPTEMBER 8.

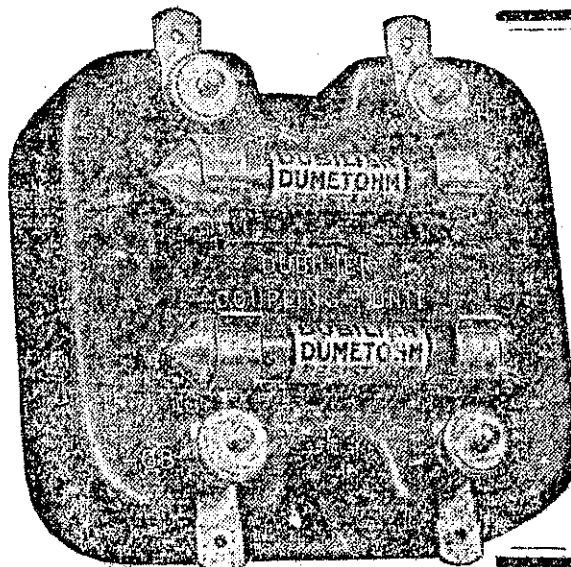
- 2.45 p.m. Relay description of Rugby football match from Carisbrook Ground (New Zealand v. New South Wales) (second test).
 4.45: Close down.
 7.15: News session.
 7.30: Address under the auspices of the Workers' Educational Association.
 8.0: Town Hall chimes.
 8.1: Relay of orchestral items from the Strand Theatre Orchestra, under the direction of Mr. L. D. Austen.
 8.10: Baritone solos—Mr. Arthur Lungley, (a) "O, Tu Palermo" (Verdi); (b) "Loving Smile of Sister Kind" (Gounod).
 8.17: Violin solo—Mr. Harold Riddle, L.T.C.L., "Der Sohn Der Heide" (Keler Beler).
 8.23: Contralto solo—Miss Irene Horniblow, L.R.A.M., "Softly Awakes My Heart" (from "Samson and Delilah") (Saint-Saens).
 8.27: Instrumental trios violin, 'cello and piano), (a) "Petite Marie" (Jerome); (b) "The Mill" (Raff).
 8.37: Humorous recital—Miss Molly Gallagher, F.T.C.L., "Paddy's Courting" (Anon).
 8.42: Bass solo—Mr. J. Ferguson, "Scottish Emigrant's Farewell" (Hume).
 8.45: Pianoforte solos—Mrs. Ernest Drake, (a) "Ballad in A Flat" (Chopin); (b) "Moonlight" (Pargren).
 8.53: Mezzo-soprano solo—Miss Agnes Guy, "The Old Clock" (Drummond).
 8.56: 'Cello solo—Mr. P. J. Palmer, "Idylle" (Squire).
 9.1: Weather forecast.
 9.3: Relay of orchestral selections from the Strand Theatre.
 9.13: Baritone solo—Mr. Arthur Lungley, "Open Thy Blue Eyes" (Massenet).
 9.16: Violin solos—Mr. Harold Riddle, (a) "Aufschwung" (Gurlitt); (b) "Simple Aven" (Thome).
 9.21: Contralto solos—Miss Irene Horniblow, (a) "Lullaby" (Scott); (b) "Looking Back" (Scott).
 9.26: Instrumental trio, "Intermezzo from Cavalleria Rusticana" (Mascagni).
 9.32: Recitals—Miss Molly Gallagher, (a) "Napoleon's Tomb" (Anon); (b) "Catch Me" (Scott Gatty).
 9.41: Bass solos—Mr. J. Ferguson, (a) "Caller O'U" (Gray); (b) "Bonnie Scotland, I Adore Thee" (Blamphin).
 9.48: 'Cello solo—Mr. P. J. Palmer, "Alla Pollacca" (Goltermann).
 9.54: Mezzo-soprano solos—Miss Agnes Guy, (a) "O Dry Those Tears" (del Riego); (b) "Happy Song" (del Riego).
 10.0: God Save the King.

3YA, CHRISTCHURCH (306 METRES), SUNDAY, SEPTEMBER 9.

- 3 p.m.: Studio concert—Selected studio items.
 4.30: Close down.
 5.30: Children's son service, conducted by Uncle David. Hymns will be sung by children from Tennyson Street Congregational Sunday School.
 6.30: Relay of evening service from Trinity Congregational Church. Preacher, Rev. D. Gardner Miller. Organist, Mr. Alec Mill, L.A.B. Choirmaster, Mr. A. G. Thompson, B.A.
 8.15: Rebroadcast of 2YA, concert by Municipal Tramways Band in His Majesty's Theatre, Wellington.
 9.30: God Save the King.

4YA, DUNEDIN (463 METRES), SUNDAY, SEPTEMBER 9.

- 5.30 p.m.: Children's song service, conducted by Big Brother Bill, assisted by a young folks' choir.
 6.30: Relay of service from St. Andrew's Street Church of Christ. Preacher, Pastor W. D. More. Choirmaster, Mr. W. Hickey.
 8.0: Studio concert.
 9.15: Close down.

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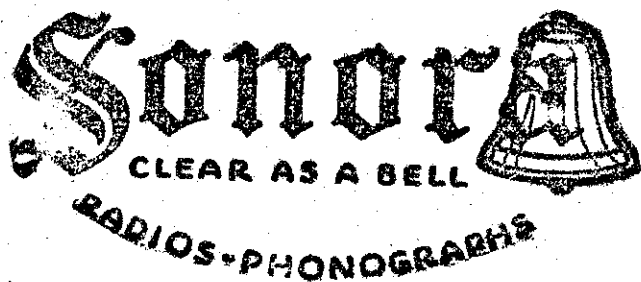
404 Worcester St., Christchurch

Sunday, September 9**1YA, AUCKLAND (333 METRES), SUNDAY, SEPTEMBER 9.**

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Further selected items.
 4.30: Close down.
 6.0: Children's hour—Song service, conducted by Uncle Leo, assisted by cousins from Beresford Street Sunday School.
 6.55: Relay of evening service from St. Andrew's Church. Preacher, Rev. George Budd. Organist, Mr. Neil McDougall.
 8.30: Gramophone lecture-recital, Mr. C. B. Plummer.
 9.30: God Save the King.

2YA, WELLINGTON (420 METRES)—SUNDAY, SEPTEMBER 9.

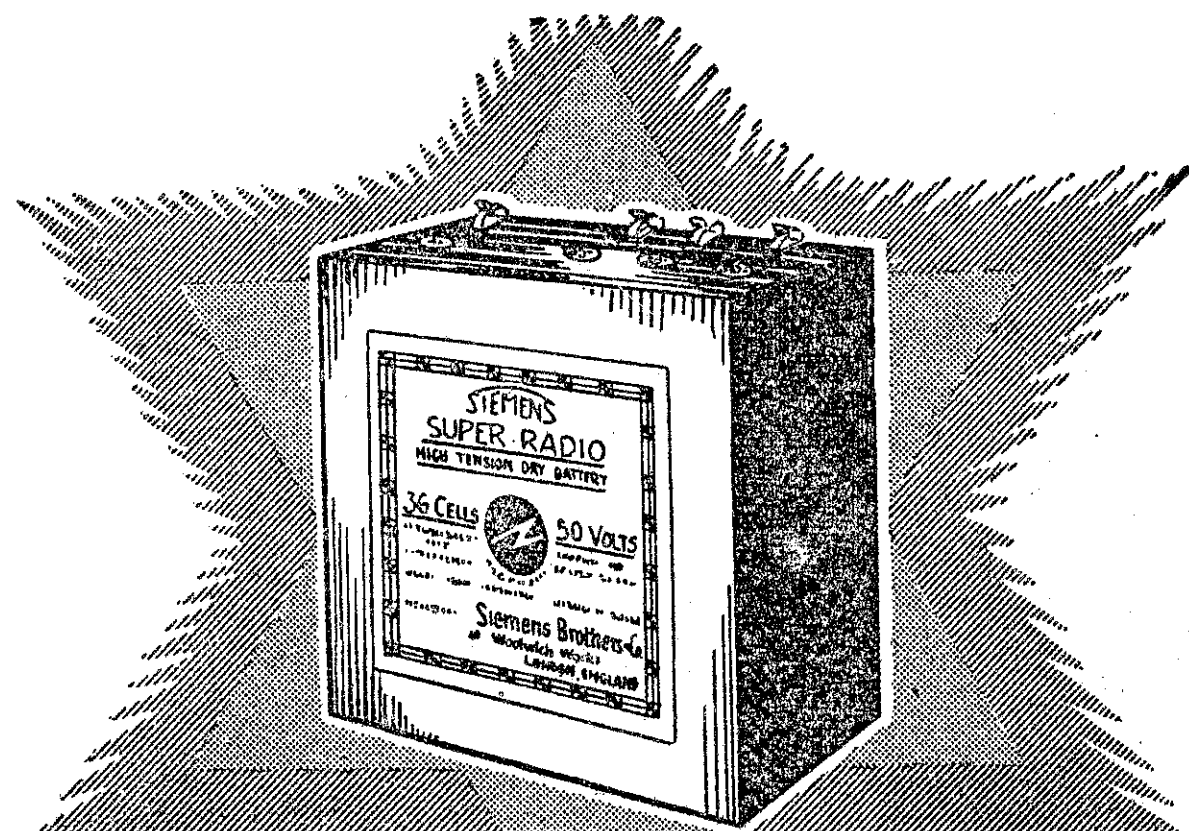
- 3 p.m.: Afternoon session—Selected studio items.
 4.30: Close down.
 6.0: Children's Sunday service, conducted by Uncle Ernest, assisted by St. James' Presbyterian Sunday School Choir.
 7.0: Relay of evening service from Taranaki Street Methodist Church. Preacher: Rev. Clarence Eaton. Organist and choirmaster: Mr. H. Temple White.
 8.15 (approx.): Relay of band recital of Wellington Municipal Tramways Band from His Majesty's Theatre (conductor, Mr. T. Goodall).
 God Save the King.



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ANSWERS TO CORRESPONDENTS.

A.M.D. (West Coast) and T.W. (Waiheke) write commenting on artists. To publish these letters would be contrary to our policy of declining to discuss individuals. Complaints should be addressed to the Broadcasting Company.—Ed.

T.M.L. (Otohangī).—Your problem has been dealt with in the "Radio Record" of July 6, 1928, to which we refer you. There is no regulation by which this can be enforced.—Ed.

R.A.S.—The number "Could Lloyd George Do It?" will be repeated by Mr. Stark on September 21.

G.F., Dunedin.—The Japanese stations asked for are JOAK (345 metres), Tokio, JOBK (400 metres) Osaka, JOFK (353 metres) Kiroshima, JOGK (380 metres) Kumamoto, JOHK (390 metres) Sendai, and JOIK (361 metres) Sapparo. A comprehensive list of stations available, times, etc., is given in the New Zealand Radio Listeners' Guide (160 pages), available from dealers or ourselves.

I HAVE a Polar Twin set and am using two 45-volt Burgess B batteries. Would it be more economical if I only used one?—"Twin."

If the set will work satisfactorily on 45 volts, then it is certainly more economical to do so. If, after re-

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.

ducing, you find that distortion occurs, it will be necessary to adjust the "C" battery.—Ed.

Sunday Night Concerts.

UNDER "Our Mail Bag" I notice "Not suitable for Sunday," and as this correspondent evidently has a set capable of picking up stations between 300 and 450 metres it is a wonder to me he does not do a little "dial twiddling." I am confident that if he does he will find a station that on Sundays caters well for his needs, and as regards "high standard" it will fill his requirements lovely. I, for one, trust the company see their way to let 2YA still carry on with the good work. It is the only bright spot on Sunday that we can find. Listeners who switch off can rest assured anything unsuitable for Sunday, according to the company's policy, will certainly not be broadcast.—H.F.B., Auckland.

AS a letter under the heading "Not Suitable for Sunday" appeared in your paper deprecating the broadcast

of the band concerts by 2YA, let me say that is the favourite programme of the week here and to rob the boys who assemble to hear it of this pleasure would be a crime. It sends us off to bed bubbling with merry music. I suggest that the correspondent should at 8.30 p.m. tune in 2FC and get "something in keeping with the day"—a second service and a second sermon. Go ahead with the band and the merry songs. If the artists knew the happiness they give in the backblocks they would go on to the tenth encore. Carry on broadcasters and give your critics the first stone to cast.—Satisfied (Mokaha, H.B.).

"Not Available for Broadcasting."

AFTER due consideration I have addressed this letter to "Wellington," though for some time I thought it might be more properly addressed to "Wowserston"; in fact, it was only the bare possibility that the envelope might find its way to Dunedin that led me to make the alteration. The possibility, of course, I will admit was a very remote one, particularly in view of the latest super-wowser production from your town. That some hide-bound porridge consumer should object to an enjoyable concert being broadcast on a Sunday evening is quite understandable, but that a broadcasting company, presumably controlled by intelligent business men, should be led astray is beyond comprehension. When one considers that a receiving set is a machine that can be turned on and off at will, the only conclusion from the facts is that these people are appointing themselves honorary sanctifiers of the souls of mankind generally. It can be confidently anticipated that a Bill will be before Parliament shortly making it a criminal offence to play fox-trots on a gramophone on Sunday.—Diogenes.

I AM writing to let you know how the programmes on Sunday nights from 2YA have been appreciated, and at the same time I wish to let you know how disappointed our radio circle here was on Sunday night, August 19, at the "items" on the programme "not available for broadcasting." Surely the letter of protest from a writer was not the cause of it, as the non-broadcasting of the races was not felt by one-tenth of the listeners-in as was the deletions from the Sunday night's programmes. Can it be that Mr. G. Titchener's humour shocked them—I think not, as even some of the churches, with meagre congregations, would welcome some of his humour to brighten the service. We trust that the programmes will be broadcast in their entirety, and we feel confident to leave it to the management to continue as they have done in the past to supply clean and wholesome programmes and not be swayed by "wowseristic" motives.—Aerial.

[The items in question were not broadcast because of contract restrictions placed on certain visiting artists, and not because of any question of the unsuitability or otherwise of the items themselves.—Ed.]

Reception in Dunedin.

I FEEL it incumbent on me to acquaint you with a few facts that I think should be known and be rectified. Of late reception of 2YA by me and many other of my friends here in Dunedin has been very bad indeed; fading and indistinctness being the chief characteristics. Not a single item comes in with power and distinctness. What is wrong? The people here have come to the conclusion that the station is not using the power that it did at first, namely, 5000 watts. If this is a fact, you should let the public know and not keep them under a misapprehension. You have material in your programmes which is spoilt in some way or other. A very poor compliment to the talented artists. And this is not on account of my set being out of condition, but is on account of the station being out of condition. Hoping you will be able to alter these conditions.—D. E. Booth (Dunedin).

[We have made inquiries, and can give the assurance that 2YA is being fully maintained on the rated power of 5 kilowatts. Correspondence received from other centres shows that reception has improved since the adoption of crystal control and occasions no trouble. In the circumstances it would seem as if Dunedin is not particularly well situated in relation to 2YA. The satisfactory reception accorded elsewhere shows that the trouble experienced is not due to a technical fault in the transmission.—Editor.]

Programmes of JOHK.

AS a certain amount of interest is evinced in the Japanese station JOHK by owners of valve sets, the following particulars, contained in a letter verifying my report of reception in May last, may be worthy of mention in your columns;—

The call sign: JOHK Sendai Hosokyo.

The position: Sendai-shi, Japan.

Transmitter: S.T.C. 10 K.W. (Geneva Rating 15 K.W.).

Antenna: Height 60 m., horizontal length 43 m.

Antenna current: 24 amperes.

Frequency: 770 K.C.

Wave-length: 390 m.

With the exception of two breaks the station is on the air almost continuously from 9.30 a.m. till 10 p.m. The evening programme is: 4.30 to 4.40 p.m.: First General News Bulletin. 4.40 to 4.50: Stock market, foreign market prices. 6.0 to 6.30: The Children's Hour. 6.30 to 7.10: Lecture. 7.10 to 9.30: Second General News Bulletin, lecture, weather forecast, music, etc. 9.30 to 10.0: Time signal. Announcement of programmes of next day.

The morning and afternoon programme consists mainly of talks also. I wonder if many European residents of Japan have radio sets?—Guy C. Holmes (Masterton).

Quality of Announcements.

I READ with interest the remarks of Mr. William Ferguson. Whilst what he says is perfectly true, I like the present announcer at 2YA incomparably better than others. Mistakes in pronunciation are unfortunate, but when the perpetrator has a pleasant voice and cheerful manner, I am much more willing to condone them. The fault lies not so much with the an-



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nouncer as with the management, which has permitted 2YA to offend from the inception of the station. With regard to the pronunciation of foreign words in the programmes, it should not be hard for the announcer to get some erudite friend to coach him. I should be very sorry to hurt the announcer's feelings as I quite look upon him as a friend and I am sure he will take these remarks in good faith.—R. Stuart W. Hunt.

Following Megohm's Advice.

IT may be of interest to you and to other listeners who are amateur constructors to know that the "Screen Grid Booster for Short Wave Receiver" by "Megohm," which I informed you recently I intended to incorporate with "The Record Short Wave Shielded Receiver," has turned out a perfect success, particularly so when using broadcast coils and I can confidently recommend any amateur constructor wishing to build a set suitable for dual purposes to make one up. To give an idea of the volume obtainable the "Linen Diaphragm Speaker" by "Megohm," is the only one I have as yet been able to get to stand up to the volume obtainable. My log to date on the broadcast band using loud speaker only is 1, 2, 3, 4YA's, 4ZL, 1ZB, 1ZQ, 2BL, 2FC, 2UE, 2KY, 3LO, 3AR, 4QG. Careful tuning is required as the set is very sharp, and constructors will find it advisable to use a wave trap. On actual S.W. work I have further experiments to carry out before I can say exactly what this machine will do, but from the way things are panning out, it appears there is too much volume to control.—H. F. Bashford, Avondale.

Old Songs.

WHILE I think the New Zealand Broadcasting Company are doing the best they can for the listeners-in, may I suggest that, say, from one of the stations, say, once a month, that they put on a programme of old songs—"Home Sweet Home," "The Holy City," "Ora Pro Nobis," "The Star of Bethlehem," and other songs are quite good songs, and would be appreciated

by the older, and, I think, by the younger listeners.—J.W. (Otorohanga).

Gramophone Records.

I HAVE taken the "Record" from the first number, and I must say that I have always found it a very instructive and useful paper, and well worth the small cost per year. Having been a constant listener for eighteen months, and knowing the quality of programme then being broadcast, I say that the company is doing its level best commensurate with its income. The New Zealand listening public must always remember the company has only a comparatively small amount of capital to work upon, compared with that of the Australian stations. Now here is a word of well-meant advice, and it is not because I am an Auckland. If the company will see fit to broadcast more gramophone items of the public taste, and cut out a little more of the monotonous solos, etc., I believe there would be greater interest taken in the programmes broadcast. I refer here more especially to the Auckland station.—P. H. Spring.

2YA on Banks Peninsula.

I HAVE found that since 2YA has been put on crystal control, the transmissions are a long way worse in this district. It does not matter how you tune 2YA no improvement results from it. The evening sessions are diabolical and the afternoon sessions, which were in my opinion the best for tone and clarity, are easily the worst. This is the opinion of several other listeners as well as my own. The Salvation Army Band concert is the clearest that has been for some time. I thought I was going to enjoy 2YA's concert last night (Friday) as it was unusual. But the transmission was terrible, everything was blurred and mushy. The announcer's voice and the piano were the only items to be heard clearly. I tried 2YA several times between 8 and 9 p.m. and it was always mush. A strange thing the mush never cleared like it does on other nights. 1YA, 3YA and 4YA came in clear as a bell.—A. R. Gardiner (Purau).

Two Uncommon Stations.

IN April last I (and other listeners) reported reception of Station 9XF, Chicago. I logged this station again last evening (August 19), the call this time being given as "Voice of Service WENR, Chicago," the power being the same as previously—viz., 50,000 watts; also the wavelength—viz., 288 metres 1040 kilocycles. (A letter received recently from the owners of the station, the Great Lakes Broadcasting Co., verifying my report of reception, stated that the new station 9XF would replace the present stations WENR and WBCN.) Reception last evening was far better than in April. The announcer said they were using a new transmitter—which is evidently an improvement. He stated this was a test programme and that there would be another test transmission on Saturday next at midnight, continuing until 3 a.m., Chicago daylight saving time. I first tuned in the station at 5.35 p.m. and listened almost continuously until they signed off at 7.28½ p.m. For the last hour especially reception was at good speaker strength and very clear, though there was a certain amount of fading. Mostly, speech was clearly heard all over the room. While having tea in the next room, about 28 feet from the speaker, I could hear the music very easily and clearly—this from a station upwards of 8000 miles distant! The transmission concluded with chimes and a clock striking, but whether this was a Chicago clock or

"studio effects" I was not able to determine. Last evening I logged for the first time station KFWB, Hollywood, California operating on 361.2 metres. I notice the most recent issues of "Radio News" give the wavelength of this station as 353 metres.—Guy C. Holmes (Masterton).

[361.2 is the allotted wavelength of KFWB, Los Angeles, California. It is operated by Warner Brothers Pictures.—Ed.]

A Crystal Puzzle.

I WISH to thank a reader of your paper for his answer to my inquiry re a station on 1YA's setting and another on 2YA's setting. I would also like to know who has the best list of stations received on a crystal set and 2-valve amplifier. My list is:—N.Z.: 1YA, 2YA, 3YA, 3ZC, 3CM (on 80 metres) and 4YA. Australia: 2FC, 2BL, 2GB, 3LO, 3AR and 4QG. Total, 12 stations, which I think is not too bad. I have also started to put in the "Pierce earth system," and although I have only put in eight pipes so far, I find a good earth as necessary as a good aerial. A few weeks ago I altered my crystal set. First of all I had a variable condenser (.00035) and a 60-turn coil, which used to bring in the Aussies practically every night. Since I have altered it to a tapped coil and variable condenser I have not heard any of the Aussies. Could anybody suggest a reason.—E. Powell (Christchurch).

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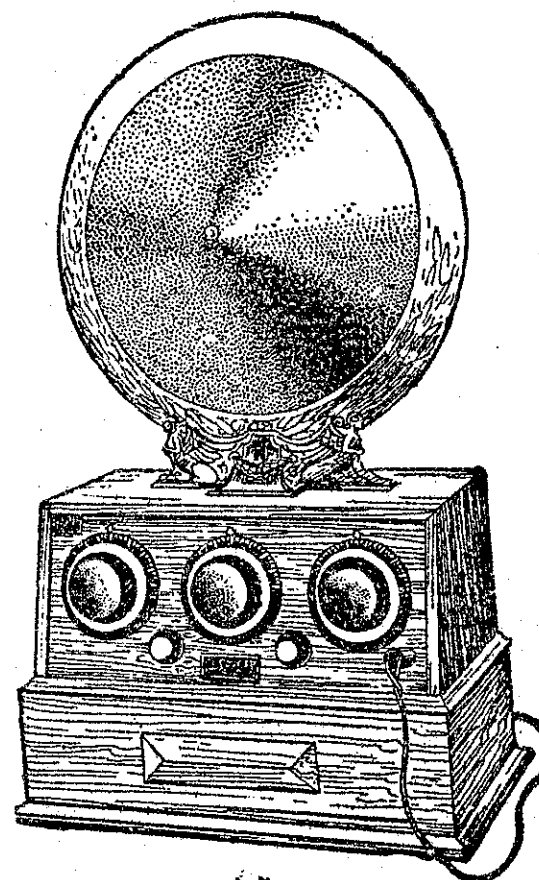
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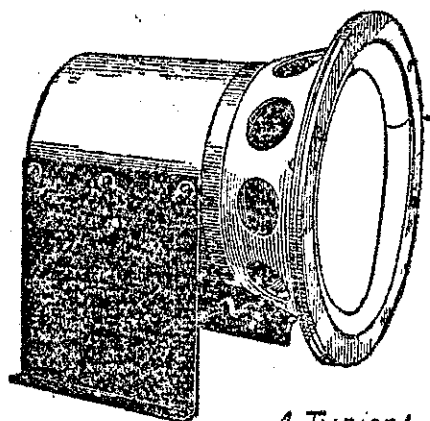
The Moving-Coil Loud-Speaker

Principles and Design (By Megohm)



MOVING-COIL or coil-driven loud-speakers, also called "dynamic," have not as yet been much used in New Zealand, because up to the present very few have been imported. There are signs now of an awakening in this respect, owing no doubt to the good reports of this type of speaker, and at least one firm has a shipment to arrive very shortly.

Owing to the construction of the speaker, it lends itself to amateur construction so long as the necessary castings can be obtained ready made. A great many different makes of ready machined castings are now obtainable



A Typical
Coil-driven Speaker
(Baffle not shown)

In England, and no doubt suitable designs will shortly be imported into New Zealand.

Prices for the complete speaker in England run from about eight or ten guineas up. Cheaper makes are advertised, but probably their performance will be only in keeping with the price. Essential parts, the castings and diaphragm, are sold in sets at various prices from £4 up. One make is advertised as parts that may be assembled in five minutes, so that the windings and cone must be complete.

General Design.

IN appearance, a moving-coil speaker at once conveys the impression that it is a cone speaker of some kind, but an examination of the principles involved in its working, the great difference between this and ordinary cone or horn speakers is very evident.

Moving parts are practically down to the irreducible minimum, as the cone-shaped diaphragm and tiny coil attached to its apex form the sole moving portion. This small coil of fine wire is the "moving coil" and is in circuit with the plate of the last valve of the receiver.

This coil is situated in a strong magnetic field generally produced by an electro-magnet, sometimes by permanent magnets, and is free to move as actuated by the alternating plate current traversing its turns, communicating such movement direct to the cone diaphragm. The more powerful and most effective speakers are actuated by a powerful electro-magnet which must be supplied with smooth continuous current during such time as the speaker is in operation, so that this current constitutes a running cost that does not enter into the operation of ordinary loud-speakers. Then again, in order to keep the moving coil as light as possible, it contains comparatively few turns of wire, and on that account a receiver capable of giving heavy volume is essential for satisfactory operation. These two points, however, will generally be easily overcome, and where electric mains are available, the current supply for the field magnet becomes a comparatively economical

proposition, and the gain in quality of reproduction is well worth the small additional expenditure. Where the supply of energising current is impracticable, as in many country places, there is still the permanent magnet type, which then costs no more to run than does a speaker of ordinary type, and will give volume in proportion to the output of the receiver in use.

The "Pot" Magnet.

THE field magnet is usually referred to as the "pot," and differs in construction from the ordinary electro-magnet in the way the two poles are brought into close proximity, leaving a ring-shaped or annular space in which the moving-coil works in a highly magnetic field.

Referring to the diagram, it will be seen that the field magnet winding encircles the centre projection inside the pot casting, whilst the sides act as a connection to the opposite pole, which is a round disc of iron with circular hole in the centre, and screws secure it to the top edge of the pot, leaving the annular space between itself and the central core.

Taking the dimensions from a description of castings for the purpose, the central core is 2 inches in diameter, over $3\frac{1}{2}$ inches long, outside diameter of pot 5 inches, and over $4\frac{1}{2}$ inches deep. Into the space in the pot is dropped the winding, the wire and number of turns suited to the current available. For operation from 240-volt direct-current mains the winding would consist of 37,000 turns of No. 36 s.s.c. wire. A resistance may also be necessary in the circuit to prevent overheating of the winding, though its resistance would be about 1600 ohms. A wire-wound buffer resistance of 4000 to 6000 ohms is essential across the magnet terminals to prevent damage from voltage surges when switching.

For operation from a 6-volt battery, the above-mentioned magnet may be wound with 5lb. of No. 16 d.c.c., giving 600 turns, amps. current, or 1000 turns of 18's d.c.c. From $\frac{1}{2}$ to $\frac{3}{4}$ amp. is the usual consumption when working off a 6-volt battery, but the windings mentioned would consume rather more.

Operation from alternating current mains presents a rather more difficult problem, as the current must be rectified and smoothed. One method of overcoming this difficulty is to employ a full-wave A battery charger capable of delivering 20 volts from each side of the transformer secondary, and a filament winding giving two volts. A Philips rectifying valve No. 367 is used in conjunction with the two suitable resistance lamps (340), and an output of current up to 6 amps. may be obtained. A magnet winding to suit this supply would have about 2600 turns of 22's d.c.c. (4lb.), taking about .8 amp.

The Moving Coil.

TWO types of moving coil are in use, one high and the other low resist-

ance. To suit the castings above referred to, the inside diameter of the coil would be just over 2 inches, a loose fit over the central core, just sufficient clearance being given to allow of free movement of the coil without touching the core. The annular space in the magnet is 3-32nds. of an inch in width, so that the thickness of the coil must be rather less than this, with a depth of about 5-8th inch. A low resistance coil is wound with 38's or 40's enamelled wire, about 250 turns being put on a former of thin paper. When a low resistance coil is used, a step-down transformer of perhaps 25 to 1 ratio is necessary between the receiver and speaker.

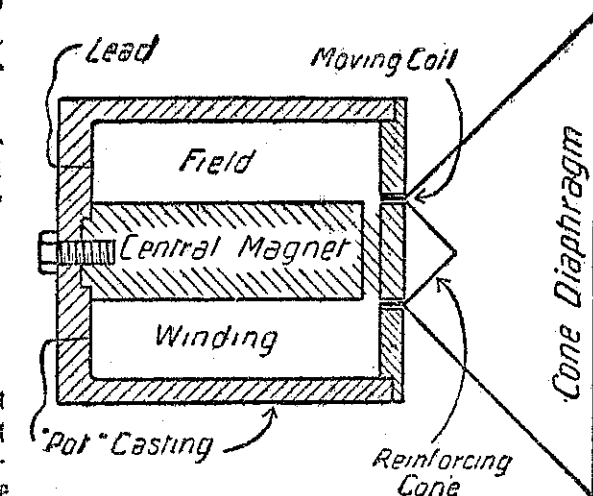
A high resistance coil is wound with 47's enamelled wire, is difficult to wind, and burns out easily, and for this reason constructors are inclined to favour the low-resistance coil. As many as 1500 turns of fine wire may be wound in the small space available, but a choke-condenser filter must be used to protect the fine winding from plate current. A low resistance coil will give more even response in the range between 50 and 8,000 cycles than will the coil of high resistance.

The Diaphragm.

IT is important that the weight or mass of the cone and coil combined be kept as low as possible. Extra size favours the low frequencies at the expense of the high.

Some speakers have diaphragms only 6 inches in diameter, but are liable in some cases to lack the bass notes, and to make the letter "s" whistle. An average size that is used is 9 or 10 inches in diameter. Drawing-paper known as "detail paper" is suitable for the construction of the cone. If the cone is not of good design it is liable to have objectionable resonance at certain frequencies.

The edge of the cone is attached to the outer iron frame by means of a



circular strip of sheepskin or similar very pliable material, as a more free method of suspension tends towards weakening of high notes.

It will be seen from the fact of the coil having such small space in which to move freely, that its correct adjustment is highly important if noise caused by friction with the magnet is to be avoided. In many models three or four threads are attached to the back of the cone, branching out radially, and adjusted by means of fine thread screws, so that the coil may be kept central in the annular space.

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Sometimes a small cone with apex facing outwards is secured to the inside of the large cone, its diameter equalling that of the moving coil. This addition will in some cases make an improvement in bass note reproduction.

In order to get good reproduction a baffle-board of some kind should be used. This should be of three-ply or heavy millboard three or four feet square, with a round hole in the centre through which the speaker works.

Merits of the Moving Coil.

THE above details are not given as working instructions, but with a view to giving readers a fairly accurate idea of the construction work involved in a moving-coil speaker.

Its construction allows of liberal movement of the diaphragm without obstruction such as causes "chattering" in ordinary speakers. Coil-driven speakers have far less resonance than ordinary types, and give more even amplification of all frequencies, as the diaphragm correctly follows the voltages applied to the grid of the last valve. The bass note reproduction gives the effect of overall sound intensity, and the higher frequencies give the quality of the transmission. The coil-driven diaphragm is free to be moved through the liberal amplitude necessary to reproduce intensities of volume in proportion to the frequency.

Hints on Soldering

Having a good iron or other suitable means of heating soldered joints is important, but using it efficiently is just as necessary. Many failures of newly-constructed receivers are caused by one or more "rosin" joints in which heat has not been applied for a sufficient time to make a sound joint, with the result that the rosin core has melted and formed an insulating cement that "joins" the wires but allows no electric impulses to pass.

The correct way of using rosin-cored solder is to first apply the iron to the work in order to heat it as a preliminary, then raise the iron a trifle from the work and introduce the rosin cored solder between the working face of the iron and the work itself. Then press the iron against the work and hold it there until you note the solder flowing smoothly and freely about the contact. Then lift the iron and allow the work to cool and you will find that you have executed a perfect joint.

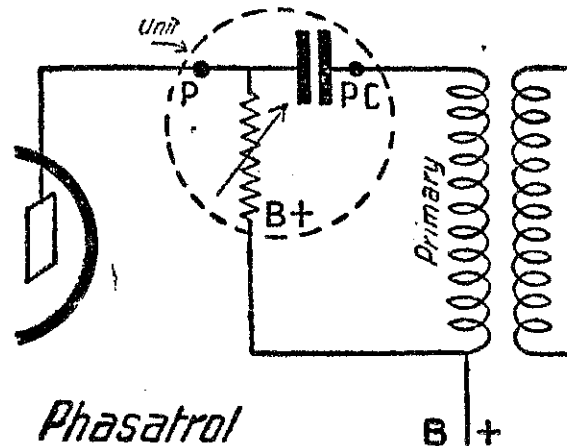
Never attempt to carry your solder and flux to your work on the heated iron point, because it requires skill of a high degree to accomplish a satisfactory operation in this manner. If you melt solder on the upper faces of the iron it forces the flux and solder to run around the iron faces before it can reach the surface which we wish to solder. This allows the abietic acid to volatilise before it has any opportunity to accomplish its purpose. Then you are likely to secure one of those dreaded rosin joints. Those who are in doubt as to their skill in executing a successful soldered joint can adopt no better method than to first "tin" with solder the two surfaces which they intend to join; then bring them in contact and reheat, applying a small amount of the rosin cored solder directly to the union to complete the operation.

The iron must be kept clean and well tinned in order to make sound and satisfactory joints.

The Phasatrol

THE Phasatrol is a device for the prevention of oscillation in tuned radio-frequency amplifiers. It is easy to adjust, and is said to have a more constant gain on all wave-lengths than other neutralising systems. The Phasatrol unit is a variable high resistance combined with fixed condenser of suitable value, their purpose being to shift the phase of the alternating voltages in the plate circuits of the R.F. amplifying tubes, so that over a certain waveband, tube oscillation and excessive regeneration are eliminated.

When the Phasatrol is connected in the plate circuit of an R.F. valve as shown in the diagram, the fixed condenser of the Phasatrol changes the time factor of the feed-back impulses, so that instead of returning to meet the signal impulses "in phase" and building them up into undesired oscillation, they travel through the grid-to-plate capacity of the valve and arrive on the grid just after the signal oscillations have gone. As a result there is no building-up action to cause unwanted oscillation. In theory the phase dif-



ference is never absolute, but the slight regeneration that takes place is negligible.

The function of the variable resistance is principally to feed the direct B current to the plate of the valve. This resistance is non-inductive and non-capacitative and has no effect on the phase displacement.

The unit is adjusted to balance the receiver by turning the set-screw provided slowly backwards in anti-clock direction until maximum signal strength without oscillation is obtained on low wave-lengths. Once the correct adjustment has been obtained, no further attention is required. The Phasatrol is used very successfully for neutralising Browning-Drake R.F. circuits.

The Earth Plate.

A BURIED conductor, or several of them, running in the ground under the aerial, constitutes the best earth, but cannot always be conveniently provided. A good earth is a buried dust-bin, water tank, or sheet of galvanised iron buried a full six feet deep, or where the ground is always moist. It is a good plan to solder on three stout copper wires in different places and join these above ground to the earth lead to receiver. All these underground soldered joints should be protected with paint, tar, or varnish of some kind to prevent possible early disconnection. Adopt a good earth system and use it alone. Do not connect to two separate earths at the same time, as each one will probably require a different tuning.

Methods of Volume Control

LISTENERS who are situated only a comparatively short distance from a broadcast station are particularly interested in the subject of volume control, but it is also of interest to any possessor of a good receiver.

R.F. Stages.

THERE are several ways of controlling volume, a good method being the placing of a variable high resistance either in series with the aerial lead, or across the aerial and earth terminals. In either case the resistance must vary from zero to a very high figure, not less than 200,000 ohms in the first case, and several megohms in the second.

If the energy is not controlled at the entrance to the receiver as above, then a variable high resistance with a maximum of about 400 ohms may be placed in series between secondary coil and R.F. transformer and filament. This method, however, decreases selectivity.

Another method is to place a 200,000 ohm maximum variable resistance in the B positive lead to the R.F. valves. There should always be provided a bypass condenser of not less than .005 capacity, placed on the side of the resistance nearest the primary coil, the other end of the condenser being connected to the earthed filament lead. This method is very satisfactory with most receivers, and is really a way of reducing amplification, or oscillation control.

The filament rheostat control is very popular, and very satisfactory when wisely used. This method functions by limiting the emission current, which increases the impedance of the valve, and if the current is unduly cut down, distortion is possible, so that care is required to see that the reduction is kept within reasonable limits.

The Detector.

CONTROLLING volume in the early stages is a good scheme, but in a set employing regeneration it is understood that reaction should be suitably reduced before other controls are used, and very often will be sufficient, leaving other controls set at the point of maximum efficiency. Sometimes a variable high resistance of the non-inductive type is shunted across the tickler, and though this system is used in many circuits, especially those for short-wave reception, is not always the most satisfactory, and moving coil or condenser control are more popular.

If control is left until after the detector stage, it is not so satisfactory as control in R.F. stages, because the detector may then be overloaded with strong signals, causing distortion that cannot be eliminated by any subsequent system of volume control or reduction.

Audio Control.

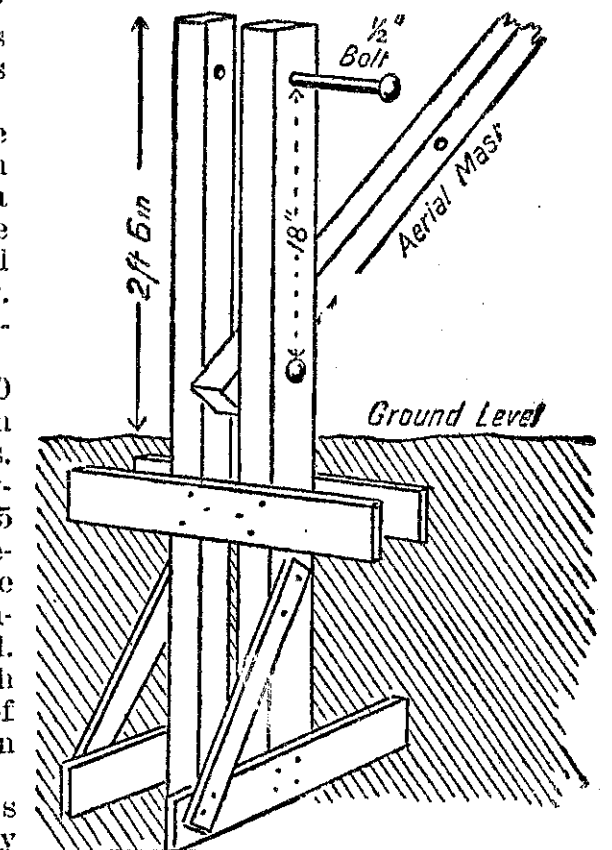
AUDIO control may consist of a variable high resistance across primary or secondary of transformers, maximum 100,000 and 500,000 ohms respectively, or across the output, that is, across the speaker leads, in which case a resistance with a maximum between 25,000 and 50,000 ohms will suit.

Volume control by detuning the aerial circuit is bad when the detun-

A Trouble-Free Aerial Pole

THERE is a method of mounting an aerial pole which is not a new idea, but which is not utilised as much as it should be, when the great convenience is considered. This system makes erection of the pole easy, and also allows of every access to the top at any time by simply withdrawing a bolt, releasing the backstay, and lowering the pole, hinged at its lower extremity. Reference to the diagram shows the arrangement in a way that requires little explanation.

Two uprights of 3 x 2 timber are connected on their lower halves by suitable strips of timber, braced as shown. The space between the two uprights is the width of the pole, 2 1/2



inches square being a suitable dimension for a 30 or 40ft. pole. Near the lower end of the pole a 1/2-inch hole is drilled, and corresponding holes in the uprights take a long half-inch bolt to act as a hinge. When the pole has been raised, it is held in place by a bolt passed through a hole drilled in each upright, and the pole, eighteen inches above the lower bolt.

The usual stays are provided to steady the pole, which may easily be lowered at any time by two persons, only the backstay being released. The pole should, of course, be placed so that when lowered its length is clear of fences, and can lay along clear ground if possible. With such an arrangement the breaking of a halyard or pulley fastening will cause little concern to the owner.

ing only amounts to a few kilocycles, and can cause bad distortion in a selective receiver. In an unselective receiver detuning will usually have no ill effects. In a selective receiver detuning is only permissible if through a good many degrees on the dial, which is an amount that would cut reception out altogether.

If the receiver is unshielded there will always be a certain amount of pick-up by the coils.

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The Screen-Grid Booster

Success and Otherwise

AN Auckland reader having made inquiries regarding the construction of the booster, writes as follows: "Without waiting for a reply to my last queries re booster attaching to five-valve, I am enclosing further queries, as I have made booster, and will state results. My friend also made one, and has attached it to a four-valve circuit he built himself, similar to a Browning-Drake, and gee! it has proved beyond expectations. He never had the Japs. or Americans before, and now he has had two of each on loudspeaker, and the small stations in Aussie he now hears on speaker. Well, you have to hear it to believe it, and three degrees will tune them out. I came straight home and started mine."

Our correspondent then proceeds to state that so far his booster has not functioned when connected to his factory-built receiver. Unfortunately, some constructors have had luck or adverse circumstances of some kind. It appears to be inevitable with any circuit that is published. In the majority of cases the trouble may be caused by a "resin" soldered joint or some equally simple matter, bad contact on valve legs, coils, etc. Then there is the valve itself. This should always be carefully tested for contact between plate and screen and screen and control grid in the case of the 222.

Some constructors, of course, make considerable alterations in the lay-out, components, etc., and where the screen-grid valve is concerned, this is certainly risky.

As a rule it is wise to place a 2 mfd. condenser across the B battery, and also across the detector voltage, in order to minimise any chance of feedback through the battery, which the H.F. choke is also used to prevent.

About Variable Condensers

FROM the early semi-circular form of the plates in variable condensers the shape has gradually evolved in four distinct stages, the straight-line frequency being the third. In this pattern the plates are made long and thin, the object being to space the stations more widely apart on the dial and avoid the crowding of most stations into a small portion of the dial, as was the case in the earlier types. At the lower end of the scale there is very small capacity increase that this type proves very susceptible to outside capacities, which thus tend to disturb the calibration line. This, however, is

not a great objection, especially where there are few stations on the lower wave-lengths, except when condensers are to be worked in gangs.

A fourth type, the logarithmic mid-line, is now in extensive use as being the happy medium between the straight line frequency, and the straight line frequency wave-length types. With this type it is possible to set several condensers to read the same on any one wave-length, and they will then give identical readings all round the dials, so that working in gangs is greatly simplified, enabling two or three condensers to be operated with one control.

Primary Importance of Impedance

There can be no doubt, in the mind of a technical reader, that the fundamental constant of a valve, which indicates its suitability for any particular purpose, is its impedance, since this must in all cases be suited to the properties of the components in the anode circuit of the valve. Provided that a valve has an impedance suitable for the conditions under which it has to work, it may be regarded as correctly chosen from among the many types available.

It follows, therefore, that a statement of the impedance of the valve should hold the most prominent place of all in the abbreviated description.

The next most important constant is the amplification factor, which serves to indicate which individual valve, among a number whose impedance is the same, will in practical use give the greatest amplification. The figure representing the amplification factor should therefore be given a place in the abbreviated description of the valve, but this place should be secondary to that held by the impedance.

Thirdly, the user, who will be in possession of either a 2, 4, or 6-volt accumulator, requires to know the filament voltage necessary to operate the valve, and this information also should be given; but, since the filament voltage has no great bearing upon the performance of the valve, it should not be given any prominent place in the description.

The filament current in these days of economical valves is of least importance except when dry batteries are used for the A supply.

Variometer Crystal Set.

A PETONE reader who constructed the variometer crystal set, described some time ago, states that with a one-valve amplifier he has received all New Zealand stations and four Australian, though reception is accompanied by fading. Considering that an ordinary clothes-line is being used as an aerial, this is good work. As stated in the article, the variometer is not selective, and was intended for local reception only, and this listener states that on some occasions he has heard several stations at the same time. The "R.R. Selective" is the best crystal circuit for long distance.

Notes on Reaction

EARLY Reinartz circuits gave reaction control that was very subject to hand-capacity effects that were not properly suppressed even by the use of metal panels.

Later modifications of the Reinartz circuit have done away with this difficulty by connecting the reaction coil direct to the plate of the valve, and interposing the reaction condenser between this coil and earth, so that provided the moving plates of the latter are joined to earth, a metal-lined panel can be used to remove any lingering traces of hand-capacity effects.

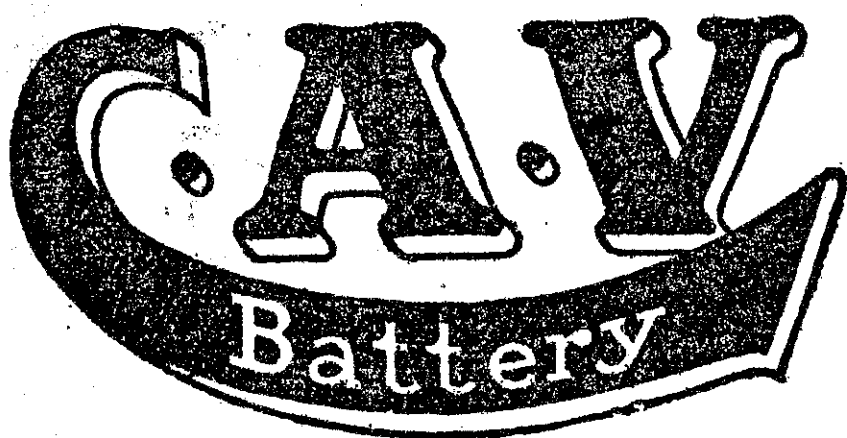
If this type of circuit, which is perhaps the most satisfactory of all, be adopted, it is found that the tuning can be made sufficiently independent of the reaction control to make adjustment of the receiver easy, though it is usual for the setting of the reaction condenser to vary widely over the different parts of the tuning range. This, however, is not found to make tuning difficult, and so is of but little practical importance.

It is found in practice that the greatest degree of independence between the controls is attained when the reaction condenser is not too small. It is therefore easier to handle a receiver in which the reaction coil is small, or loosely coupled to the tuned circuit, but is fed through a condenser of maximum capacity, perhaps 0.0003 mfd., than one in which the same degree of reaction is obtained by the use of quite a small condenser in conjunction with a large coil.

The remarks here made are equally applicable to receivers in which a stage of high-frequency amplification precedes the detector, even although in this case critical reaction should be required less frequently.

Coils and Condensers.

A HAPPY medium is the best in choosing a coil and variable condenser to work together in an R.F. circuit. The resistance of the coil varies considerably with the frequency, whilst that of the condenser remains nearly constant except at the lower end of the capacity scale. The resistance of the condenser is usually lower than that of the coil. By not making either the coil or condenser unduly large in proportion to the other, neither the voltage nor the resistance is at quite the best point, but the complete oscillatory circuit gives the best results.



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Glossary of Wireless Terms

From week to week we give here a section of the glossary of wireless terms from the "Listener's Guide."

INSULATOR.—A term applied to all materials which form very bad conductors of electric currents. They do, however, allow high-frequency oscillations to pass when they act as the dielectric of a condenser. See "Conductor."

A substance used to prevent the loss of an electric current. The most common insulating mediums, or materials are air, ebonite, india-rubber, mica, glass, porcelain, paraffin wax, paper and oil. Also the term applied to the objects inserted in the wires supporting an aerial to prevent leakage of the high-frequency currents flowing in the aerial.

INTERFERENCE.—A term used to represent a difficulty in separating the desired signals from others on a close wavelength; such interference is usually cured by increasing the selectivity of the receiver. Interference may be caused by allowing a high-frequency or detector valve to fall into a condition of oscillation. Howling valves cause interference.

INTERMEDIATE STAGES.—Refers to the radio frequency stages between the oscillating or frequency mixing valve (first valve invariably) and the detector valve, which precedes the audio stages, in a super-heterodyne receiving set.

INTERNAL OR INTER-ELECTRODE CAPACITY.—The proximity of the elements of the valve within the tube causes interaction between the grid and the anode circuits. When such action is more than usually undesirable, special valves with more widely-spaced electrodes may be used, or else special circuits such as those on the neutrodyne principle may be employed.

ION.—A gaseous atom having a surplus or deficiency of electrons, the former being called a negative ion and the latter a positive ion. Ionisation is only met with in soft detector valves or certain gaseous rectifying units used for battery charging or eliminating apparatus. It formed the basis of action in valves of ten years ago.

IONISATION.—The liberation of charged particles of gas, known as ions, owing to the liberation of electrons from the atoms of the gas, generally due to collisions between the gas atoms and high-speed electrons. See Ion.

JAMMING.—Interference in the reception of signals caused by signals from other transmitters.

JAR.—The British Admiralty unit of capacity being 1.900th or .0011 of a microfarad.

JUMBLE WOUND.—A rough-and-ready unsystematic method of winding a coil. A common example of this is the radio-frequency "choke" coil used in short-wave receiving sets.

KATHODE.—See "Cathode" and "Anode."

KEY.—The conventional name for the switch by means of which telegraphic messages in Morse are sent. The circuit is made or broken as the key is depressed or released.

KEY SWITCH.—A neat form of switch having many varieties in which only the short operating lever projects through the panel and is visible.

KILOCYCLE.—Represents 1000 cycles. The practice is growing of quoting the transmission characteristics of a station in frequency in cycles instead of in wave-length in metres. To facilitate this the figure is quoted in kilocycles instead of cycles. Thus 300 metres is a frequency of one million cycles, and this is quoted as 1000 kilo-cycles.

KILOWATT (K.W.).—The unit used for measuring large amounts of electric power, being equal to 1000 watts, or 1 1/3 horse-power, 746 watts being equal to 1 h.p.

KIT.—Usually associated with the word "Knockdown." Represents the complete parts for a radio set in an unassembled condition.

positions of the valves provides an improvement in reception. In practically every case when a medium-sized or large loudspeaker is employed, what is known as grid bias is essential to pure reproduction of music. It takes the form of a small dry battery of 4 1/2 to 9 volts, and if the listener cannot trace it in his set he should endeavour to get the advice of an experienced friend on the subject. No wireless set employing two or more valves for audio amplifying should be unprovided with a grid-bias battery.

Watch the A Battery.

THE accumulator employed for lighting the valves must be very carefully used. It should never be allowed to run down to a point where it cannot operate efficiently. Even when not in use it should be charged at least once a month.

Adjacent Aerials.

AERIALS in close proximity can cause a good amount of interference, and in some cases even a crystal set has been known to affect a valve set, either as a circuit absorbing the oncoming waves, or from the scratching of the cat's-whisker being heard in the valve set. A new listener should erect his aerial as much at right angles as possible to existing near-by aerials, in order to cut down possible interference to a minimum.

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- CE-CO VALVES** All Radio Dealers.
- FADA RADIO** National Electric & Eng. Co., Ltd.
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- FEDERAL, MOHAWK, GLOBE** Federal Radio House,
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- FERRANTI RADIO COMPONENTS** A. D. Riley and Co., Ltd. Anzac
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Tips and Jottings

Underground Aerials.

VERY good results are obtained by the use of underground aerials for the reduction of static, but volume is also much reduced. However, there are times when the absence of static is imperative, as it enables the weakened signals to be heard when they might otherwise be lost altogether. Such an aerial is usually made of a wire enclosed in a length of garden hose carefully stopped up and insulated at the outer end. The aerial is buried a foot or two deep, either in a straight line or coiled up in a hole.

Oak Finish for Cabinets.

CONSTRUCTORS who build their own cabinets will find that an excellent stain for oak can be made by mixing Japan black and turpentine in equal quantities. The liquid should be applied with a rag to the well-sanded surface, and with two or three coats a rich brown shade will be obtained.

Grid-Bias Essential.

LISTENERS should see that when valve replacements become necessary suitable valves are purchased, and here, by the way, it is worth mentioning that frequently it happens in multi-valve sets that the changing of the

Notes and Comments

By "Switch"

THE committee of the Amateur Radio Society of Wellington, fortified by a resolution adopted at a recent meeting of that body endorsing a proposal to organise a special concert to be broadcast by 2YA, Wellington, are considering plans for making the event worthy of the Society.

A SUGGESTION has been made that the fees earned by the performers in the Wellington Radio Society's broadcast programme be devoted to either that body's funds or to a new fund to extend the broadcast receiving installation throughout the Wellington Hospital.

THE patients who listen-in at the Wellington Hospital have no "silent" periods. When 2YA, Wellington, is off the air, one of the hospital patients goes to the central receiving set, and, by the aid of a gramophone and the electrical pick-up, "broadcasts" throughout the radio circuit choice gramophone records, so that the patients can lay in bed with their headphones on listening to the world's best artists.

ONE must not omit to mention that in every ward in the children's hospital large cone loudspeakers are installed and the kiddies are able to enjoy the items just like the grown-ups. One little girl was jocularly asked by a hospital visitor could he take the loudspeaker away. She was very emphatic in declaring that he could take anything but the loudspeaker.

THE male patients in the hospital are much disappointed at the action of the Racing Conference in debarring the running description of the races. They state that listening-in to the vivid descriptions of the progress of the races brought them back into the great outside world and made them forget their suffering. The action of the Racing Conference has also reacted on many ex-soldiers who are bed-ridden, and they express keen regret at the course of the governing body of racing.

THE writer has no interest in horse racing and never attends any of the race-meetings, yet he feels that the Racing Conference has taken up an unsportsmanlike attitude. In Australia all race-meetings are fully described from the course, and there has been no complaint of attendances falling off. On the contrary all the evidence available points in the other direction.

MR. W. M. DAWSON, lecturing at the recent general meeting of the Amateur Radio Society of Wellington, mentioned an important feature in connection with audio transformers. He said many cases of failure of transformers are due to the primary windings becoming corroded and eventually breaking. It is certainly correct practice to disconnect all batteries from a receiving set when it is not being used. This saves deleterious electrical action inside the transformers.

ANOTHER point stressed by Mr. Dawson was the importance of using the correct type of valve in each position in a radio set. To get the best out of a valve the impedance of the windings of a radio-frequency transformer should match the impedance of the radio frequency valve. Also the same holds good with respect to the audio stages and the impedance of the loudspeaker.

EXPERIENCED listeners agree that the calling out of slogans from broadcast stations for the benefit of those listeners who cause interference through making their valves howl is ineffective. A more practical suggestion was made on behalf of the Broadcasting Company at the recent meeting of the Wellington Radio Society. It was urged that the society appoint lecturers to speak once a fortnight from 2YA, Wellington, on the subject of the correct manipulation of a radio set to prevent howling valves.

WHILE some folk advocate the extension of the Sunday night sessions by 2YA, Wellington, until 10 p.m., there are not a few who are well satisfied with the present custom. When 2YA is on the air it more or less blankets some of the best Australian stations for listeners within a mile or two of Wellington's station. Besides on Sunday nights particularly good programmes are available from Australia. Those listeners who have paid upwards of 50 or 60 guineas for a receiving set to get Australia should not be altogether ignored.

THE reason why AC valves have given trouble in a few areas in New Zealand is almost invariably the

heavy fluctuations in the electrical main supplies. These valves are constructed to carry a certain voltage on the filament, and when this is appreciably exceeded trouble is bound to result. In areas where the electrical main's supply is fairly steady the AC valves are lasting well and are proving most efficient.

THOSE who have had AC valves burnt out at a tender age should get a qualified electrician to test thoroughly and at different periods the voltage of the electrical main's supply. If he detects heavy fluctuations he should report same to the Power Board responsible. The burning out of AC valves is a costly mishap to listeners, and the Power Board responsible should be told about it.

THE AC valves on the Wellington market are a high-grade product made after exhaustive laboratory tests on a scientific basis. Each valve is tested before packing, and the makers can do no more. It is therefore up to the public who use the valves to see that the valves obtain fair treatment. An overload of 10 or 20 per cent. on an AC valve filament means unfair treatment.

AFTER the honorary secretary of the Hospital Radio Fund had made his report on the success of the Wellington Hospital broadcast receiving installation at the recent general meeting of the Amateur Radio Society of Wellington, a gentleman present spoke of the unqualified success of the installation and the pleasure it had given him while he was a patient in that institution. He said that not only was the listening-in a most enjoyable pastime, but it made him forget his pain.

A MELBOURNE writer, commenting on the broadcasting of the correct time, says:—"The farmer may not consider the correct time, to the minute, as important as the city man who thinks in terms of trains, boats, and trams, but he does want to have the correct time for one reason among others, so that he will not be late for his favourite item on the broadcast programme. Thus he has become accustomed to regarding the correct time as more important than in the past. Travellers in country districts will tell you of the quoting of correct time by a reference to the broadcasting station, and there is no dispute about it when that authority is quoted."

WITH the approach of spring, yachtsmen and motorboat men who own radio sets should set about contriving a scheme by which they can keep in touch with broadcasting while afloat. What could be more suitable than a good radio set for life aboard a yacht when night sets in?

MANY yachts and motor-boats run across to the Marlborough Sounds during the summer. Those who operate their sets with wet "B" batteries would find it better to take

a set of dry "B" batteries when they go away with their yachts. The dry "B" batteries are now comparatively inexpensive and are par excellence for portable purposes.

THE erection of an aerial when yachting in the Marlborough Sounds is not a serious problem. It is advisable in some cases to take a spare spar to act as a second mast for erecting when the yacht is anchored snugly for the night. A little ingenuity and broadcast reception could be enjoyed every night in the Sounds. In addition to the entertainment available, radio brings to the yachtsmen the latest news of the world which is very acceptable in the Sounds away from communication with the world.

ONE Wellington listener, who is at present on a trip to England, has for years kept his motor-launch in the Sounds, and during the summer spent much of his time over there. In his motor-launch he had his radio set always, and, in addition to broadcast listening, he read morse code and was able to rake in news from all over the globe.

THE holiday touring motorist is not confronted with any problem in the form of erecting an aerial when camping out. Suitable trees are easily found for holding the aerial aloft. The writer has met many motorists who have taken a radio set with them when camping out during the summer holidays and they have said that they would never think of going camping without their radio set. Again dry "B" batteries are required owing to their easy portability.

MANY sad cases come under the notice of the Wellington Hospital Radio Fund during their visits to the hospital. One bright little boy of about fourteen years of age "ran" his own crystal set before the hospital radio installation was put in. He was well-informed on the activities of 2YA, Wellington, and was a constant source of information to neighbouring patients. Once his set wouldn't work and he was much disappointed. However, Mr. Preston Billing, technical adviser to the radio fund committee, who was making his rounds with the committee, quickly put the little patient's set in working order.

WHEN the hospital broadcast receiving equipment was being tested the radio fund committee looked for their little friend to gather from him how he liked the new installation. The little fellow was not there, and inquiries from the nurses disclosed that he had since passed away. The committee moved on in silence.

THE San Francisco "Radio" says:—"Radio vision to-day is a scientific curiosity. After some years of research and development it will become a practical reality, not as a cheap attachment to a present-day radio receiver, but as a relatively expensive piece of apparatus. Any tales to the contrary should be liberally salted before being swallowed." Some New Zealanders who are regretting the delay of the advent of radio vision in this part of the world should take notice of the above comment.

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Changing Valve Bases

Mr. W. H. Potter, Hora Hora, writes as follows:—

THE following successful method of changing the English base of a well-known valve and the fitting of an American UX base thereto, may be of interest to constructors.

Care must be taken in manipulating this change-over, but it is worth while in many cases, there being less losses with a valve fitting its standard holder than one with an adaptor fitting a foreign holder.

First dissolve the compound holding the base to the valve, by immersing the valve in warm water. This may take an hour, and when the valve can be freely moved about in its base, the fine wire leads from the glass may be unsoldered from the base prongs. Do not twist the valve in the base or the wire leads may be broken.

Valve prongs are hollow, and to unsolder the leads that come through to the ends of the prongs from the glass, hold the valve base in one hand and the glass portion in the other. Now place the valve, prongs downward, on a very hot metal plate, simultaneously melting the solder at the end of each prong. Gently lift the valve with its connecting wires, straight up out of its base, and the valve and its base are separated.

Now check the valve leads as they come through the glass, and set them in position to drop through the prongs of the new base in their correct positions. These connections can be easily traced through the transparent bottom ends of most valves.

Possibly one or more leads from the valve may be found to be too short to go through the prongs of the new base, in which case, longer pieces of the same gauge wire should be joined about half an inch or so from the glass. Here again, use care, or the original leads may break where they leave the glass.

IN changing from an English base, the writer used an old base from a UX 200A valve, which was slightly shorter in length, so that no joints had to be made.

Remove the solder from the prong ends of the new base, and gently fit the valve into it, carefully guiding the valve leads into the prongs, pulling gently on the leads when they appear through the prongs. Now independently solder each wire into its respective prong, neatly rounding off the solder at the end. This can be finally

Lightning Arresters.

IN a recent issue attention was drawn to a case where a lightning arrester saved a dwelling, or at least a radio set from fire. The lightning question, with outside aerials, need not be feared, providing the simplest of precautions is observed. But the question goes further than this: it is absolutely essential that every lead-in wire from an outside aerial shall be provided with a lightning conductor. This is stipulated in the Radio Installation Rules of the Fire Underwriters' Association.

Failure to observe this simple precaution may mean the loss of all fire insurance money.

As this regulation applies to any receiving station (crystal or valve) operating from an aerial, it is worth noting. Suitable protective devices, which will break down and cause an "earth" at 500 volts, are easily procurable for about half-a-crown. One is worth installing; it may return good interest.

Other points worthy of note from the underwriters' regulations are:—J

All aerials, stay wires, counterpoises, and leads are to be placed so that they cannot connect with telephone or electric power lines. Indoor antennae must not be connected to gas or electric fittings.

The lead-in from the aerial must be insulated.

As earths, both gas piping and the earth for the electric installation, are barred. The metal containing case of battery eliminators must be earthed. The fire underwriters' inspector has the right to examine any radio installation at any time.

Looking over the regulations as a whole, they are merely an enumeration of the points an average person would take. If in doubt, a copy of the regulations is available from the Council of Fire and Accident Underwriters' Associations, Wellington, but in all probability your dealer could settle the question.

COPYRIGHT DEMANDS

AMATEURS WORRIED

CONSTERNATION has been caused among Australian amateur 'phone experimenters by the action of the Performing Rights Association in demanding copyright fees on all works broadcast for which they are the owners of the copyright. Amateur stations considered that they were only using musical works, etc., as part of the experiment in hand, and were not receiving any remuneration, and the question of infringement of copyright was not taken into account.

finished off with a file and fine glass-paper.

The next thing is to cement the valve itself to the base, and this is easily done by running a small quantity of secotine round the edge of the glass where it fits into the base. Now carefully mount the complete valve in a holder, base downward, and after correctly adjusting the glass to its proper position, allow it to set for 48 hours, when it should be solidly fixed and ready for normal handling.

This secotine method is very effective, and may be applied to any valve that is loose in its base.

The Radio Valve

AN article recently appeared in the "Record" dealing with the function of the receiving valve. It now remains to elaborate, a little, its construction, and for this acknowledgment is due to Ernest Kauer, chief engineer, C.E. Manufacturing Co., New York.

A radio valve, in short, is a device consisting of a number of electrodes (terminals of an electric source), contained within an enclosure almost devoid of air.

A modern valve calls for the closest selection of all materials entering into its construction, as well as the greatest care in handling all of these materials during the process of manufacture.

Variety of Glass.

GLASS is used, not because it allows light to pass through, but because it furnishes a substance which can be readily moulded into desired shapes, a substance which at the same time possesses high insulating qualities, comparatively great strength, and the valuable property of opposing the passage of gasses of all kinds. Different kinds of glass are used as their particular properties become necessary.

Brass, because of its strength, freedom from corrosion, conductivity, and its ready ability to solder, is utilised for contacts and pins.

The Filament.

IN the manufacture of the filament two elements, Tungsten and Thorium, are employed. The former, hardly any more brittle than steel, is used because of its ability to sustain extremely high temperatures without fusing or melting. In this respect it is more durable than platinum.

Thorium, an element which has come into prominence during the last decade, is one of the radio active group of which radium is the most valued member. When heated, thorium emits a copious flow of electrons, and on which the whole function of the valve hinges.

A tungsten filament is impregnated with as much thorium as it is possible to cause it to dissolve. The valve of the filament wire used depends to a great extent on the amount of thorium it carries, as its exhaustion marks the termination of the useful life of the valve. This accounts for a valve going "dead" rather than burning out.

Overloading a valve, incorrect plate voltage or grid bias causes this supply to be rapidly depleted.

SOME of the newer types of valves namely A.C. and .25 amp. valves, use oxide coated filaments. These oxides may be strontium, barium and others, while the base metal may be nickel. This type operates at lower temperatures and has a higher "saturation point" (the point at which a filament will burn out).

Molybdenum is a metal which, despite a high degree of temperature, retains its mechanical strength and is used in the construction of grids and hooks to support the filaments.

Bakelite is usually used for the bases.

Magnesium, which has previously existed in the form of a small piece of metal welded on to the plate of the valve is suddenly released as a vapour or gas and performs the mission of creating a perfect operating vacuum. The magnesium vapour instantly condenses or deposits itself on the inside wall of the glass bulb and imparts to it the familiar silver-like look.

Trees as Aerial Masts

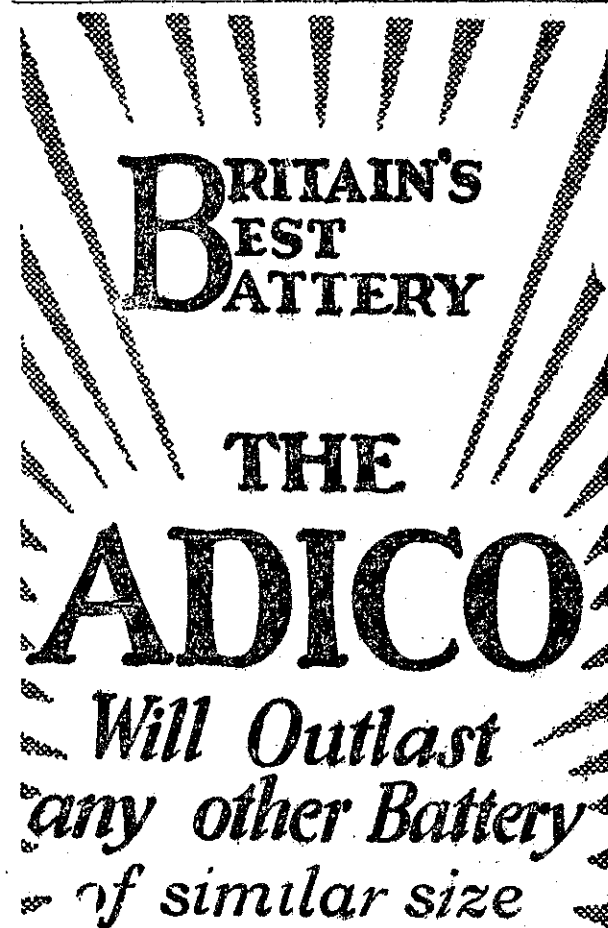
TREES are not ideal aerial supporters, but in some cases they have to be used. If so, keep the end of the aerial well insulated, at least six feet from the foliage of the tree.

Run the aerial supporting cable over a pulley, and attach the bottom end well out on a tough springy branch near the base of the tree.

When the tree bends in the wind this branch should give and apply tension as the tree moves, thus reducing the risk of the aerial snapping.

THE manufacturers of Emmco have just produced an attractive poster in six colours, featuring the slogan "Control," and depicting a lady trimming the whiskers of a tiger. This is linked with the slogan "Emmco Parts Control Perfect Reception." An attractive series of six counter or window cards in colours, all featuring Emmco productions, is available. Dealers may obtain these free from their wholesaler or direct from the factory representatives. Manufacturers, Products Pty., Ltd., Sydney and Melbourne.

IT is most important that the filament voltage should not be greater than that stated on the valve. If carefully treated valves may last for years. They should not be removed from their holders unnecessarily.



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EXIDE SERVICE STATION

79 Kent Terrace, WELLINGTON.

MR. F. W. SELLENS writes: I have to acknowledge a list of all short-wave stations from Mr. Strong, Gisborne. As most of these are morse stations, they would not interest the majority of readers of these notes. A revised list of short-wave stations using telephony is being prepared, with time to listen for them, where this information is available.

The past week has again been good for short-wave reception, with the exception of Wednesday evening, when static was very bad.

Saturday, August 18.

KDKA, on 26.3 metres, was very clear at R3, but went off the air very early, soon after tuning in. 2XAD, 21.96 metres, gave a programme supplied by the National Broadcasting Bureau till 2.30 p.m. They then announced that "We will now take you to Reilly's Lake House, Lake Lonely, Togo Springs, New York, for entertainment for the next hour."

The dance music was supplied by Henry Bussey and his orchestra. Strength was up to R8 (on the speaker) during the last half-an-hour. They signed off at 2½ minutes after midnight, Eastern daylight-saving time. PCJJ, 31.4 metres, from 3.30 p.m. till 6.30 p.m., were 100 per cent. intelligible and very steady. Strength R6 was maintained for the first hour, and then steadily decreased to about R3.

Sunday, August 19.

KDKA, 26.3 metres, was tuned in at 1 p.m., when the "Golden Band Concert from The Campers" was being transmitted. At 1.47 p.m. they returned

Round the World on Short Wave

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

to the studio and gave the day's sports results. Until this time reception was good at R4 on speaker, when a peculiar intermittent interference was very strong, spoiling further reception on that wave-length only. 2XAF, 31.4 metres, gave their usual dance music from — Hotel, New York. This was spoilt by very strong morse.

WLW, 52.5 metres, was picked up later, weak, but clear, R3—4 on speaker, relaying orchestral dance items. They signed off at 1½ minutes past midnight, E.S. time (4.31½ N.Z.).

Monday, August 20.

3LO, 32 metres, was R7 at 6 a.m. Fading was bad. Modulation excellent.

During the programme, it was stated that the police patrol boats in Sydney Harbour are now fitted up with wireless. The transmitter is at Pennant Hills, controlled at police headquarters about 14 miles distant. The work was carried out by the A.W.A.

Amateurs were busy during the evening on telephony, 2HC, N.S.W., calling 2JJ, 1CH Auckland calling 1BD. 5DX South Australia and 3KB Victoria were the best heard. 5SW, 24 metres, was R2—3 with orchestral items at 11 p.m.

Tuesday, August 21.

5SW at 6 a.m. was R3 increasing in

strength, but surging was too bad to be intelligible. At 11 p.m. they were R3, again too unsteady to understand talk.

Wednesday, August 22.

PCJJ was R5 at its best this morning, slightly unsteady, but 100 per cent. intelligible.

5SW were broadcasting a church service at 7.30 a.m., switching over for the time signal on the half hour. Strength R4.

2XAF was tuned in just before 3 p.m. when dance music was heard till 3 p.m. From then till 3.30 p.m. the carrier only was heard with a strong ripple. It was announced that a Television test had been carried out. The times were given when these tests are transmitted from WGY, 11.30 till 12 p.m., Tuesday, being one, the test just concluded. The speaker said they were for the benefit of those with Television receiving apparatus.

Thursday, August 23.

5SW from 6 a.m. till 7.30 a.m. was R4-5 with a varied programme. Reception, though fair strength was unsteady.

Friday, August 24.

PCJJ was very steady, R6 at 6 a.m. decreasing to R5 at 7.30 a.m.

5SW. Received a very enjoyable programme given by the "Wireless Male Chorus" from 6 a.m. till 6.30 a.m. Their items, which were all old time songs, included, "There's a Tavern in the Town," "Vicar of Bray," "Ye Banks and Braes," "John Peel," "Sally in Our Alley," and "Clementine." Strength R5 (speaker). Modulation excellent, slight quick fading. Every word could be clearly heard. This is the best, both strength and clarity, reception of 5SW for some time.

At 10.30 p.m. a Jap. was heard talking. he appeared to be very excited over something.

5SW at 11 p.m. was too unsteady to hear what was said.

Short-Wave Will Win.

A COMMENTATOR in the London "Popular Wireless" says:—"This sounds contradictory, but is not really. G.L.S. (Victoria, Australia), in a welcome letter, asks me whether I think the Beam system will be ultimately the means of effecting a good Empire broadcasting system, or whether ordinary short waves will get the honour. I think the ordinary short waves will win, because they are true 'broadcast'; the Empire is not only India and the great Dominions; we have to think of the people scattered over Africa, Asia, and the islands of the sea. Who is to pay for the Beams? (Four at least would be required. Technically, the Beam wins. In practice, I declare for 5SW or its successor."

Short Wave Broadcasting will Link the World

ALTHOUGH still in the experimental stages, transoceanic broadcasting is a definite development of the future, and the time is not far away when Antipodean listeners will be able to tune in to London, New York, Paris, or any of the great cities of the world (states "Popular Radio" (Aus.).

FOR the past few months the British Broadcasting Corporation has been conducting a series of experiments in order to explore channels which might possibly lead to a system of regular programmes overseas. Up to the present, according to H. Jeffree Cooper, chief engineer of the British Broadcasting Corporation, it is apparent that the future of a service of this nature must depend upon a solution of the problem of good reception

rather than upon changes at the transmitting end; for such service, to be of real benefit, must be ultimately received sufficiently free from atmospheric, fading, and other interruptions to enable it to be rebroadcast with a quality comparable with that of the local station's output.

IN addition to Britain's dream of broadcasting the programmes from the Home Country to the far-flung British colonies, the 5SW experiments are also aimed at establishing an exchange of programmes with the United States.

FOR several months past the 5SW short-wave signals have been received and monitored in New York and Schenectady, for the purpose of studying the signal strength, the intelligibility, the fading and other character-

istic of the transoceanic broadcasting relay service.

NEW York and Schenectady are 250 kilometres apart. The results at both these receiving points have been about the same. The 5SW signals have been intercepted by various professional and amateur radio men, and rebroadcast on several occasions when conditions have been most favourable.

WHILE the short-wave signals from Chelmsford are being intercepted by radio amateurs employing conventional short-wave receivers and aerials, the results obtained are by no means reliable under such conditions and limitations.

INDEED, the reception of the present signals calls for laboratory technique of the highest order; and even in the future when improvements are certain to be effected at the transmitting end, it will still be necessary to employ special equipment located at favourable points.

DR. Goldsmith states that a decided revision of the transmitter is necessary, together with the installation of special antennae and receiving sets in the United States before reliable rebroadcasting can take place. In the way of transmitter revision, the present power is probably insufficient for spanning the ocean, although power by itself is not the predominant factor in short-wave transmission.

IF the signal strength varies of the order of 1000 to 1, which is often the case in such operation, due to fading,

the signal strength comes in pounding one moment, only to fade to a whisper the next.

HENCE additional power alone can only serve to raise the entire range of signal level, although the wide discrepancy between high and low points may even be accentuated, resulting in further problems. It is the amelioration of fading, rather than greater signal strength, which is desired.

IT is necessary to employ a directional type antenna at the receiving end, in order to effect maximum interception of the desired signal, to the more or less complete exclusion of other signals and parasitic disturbances. Also, the receiving set must include some means of neutralising such residual fading as may remain in the transmission, so as to maintain a satisfactory signal level at all times.

INSTEAD of merely twisting the aerial wire round the lead-in and screwing the nut straight on to the wire, it is a good plan to solder a large spade terminal to the aerial, as this allows a much larger and more satisfactory contact to be made.

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