

Friday, October 10, 1924.

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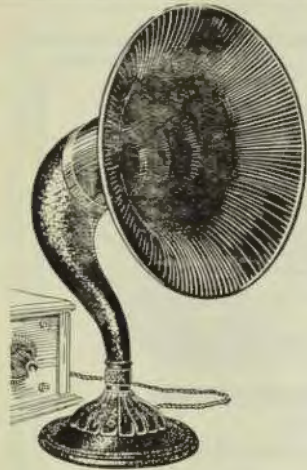
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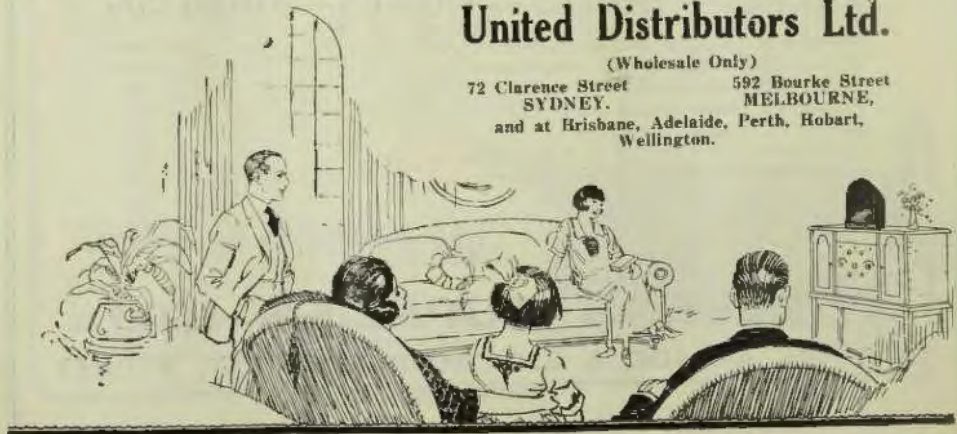
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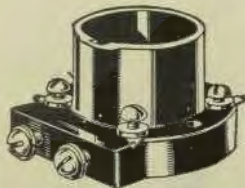


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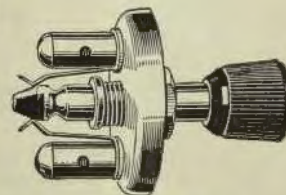
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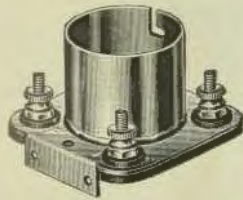
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ENGRAVED, per set of 8, 4/-

PLAIN, per dozen 5/-

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Dealers, write for price list.

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HOMOTONE VALVE SETS :: that give Satisfaction!

One Valve—Complete £13/10/-

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New Shipment of Valves

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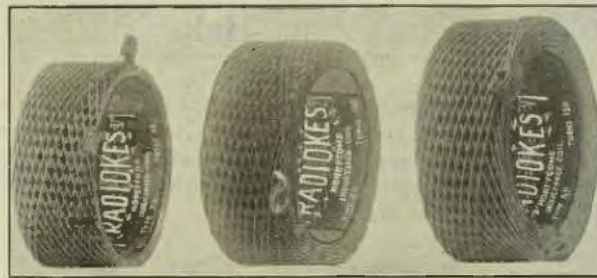
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MAXIMUM EFFICIENCY



TYPE AH

TYPE DH

TYPE GH



RADIOKES Coils are wound to give ample spacing, and are impregnated with special low capacity compound, ensuring maximum signal strength, maximum selectivity, maximum mechanical strength. Are not affected by damp.

Approximate Wave Length with .001 Condenser Turns	Wave Lengths
25	60-230 Metres
35	85-340
50	150-500
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100	280-1000
150	360-1450
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250	530-2500
300	700-3000
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500	1150-5200
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750	1600-7700
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The Most Efficient Single Valve Set for all Broadcasting Services

Here is a specially designed single valve receiving set, to cover all wave lengths—the ideal receiver for long distance reception.

It consists of a Polished Maple Cabinet with a Bakelite Panel, 8in. x 12 in. x 3/16in. on which is mounted a 2 coil Variable Honeycomb Mounting complete with 4 mounted Honeycomb Coils. A Vernier Variable Condenser with knob and dial controls the tuning, and a 30 ohm. rheostat for Valve control.

The Valve is mounted on a small platform behind the panel, together with a Grid Condenser, and Leak. The panel is fully engraved, and a small Terminal board is fitted inside the Cabinet to connect the "A" and "B" Batteries.

The Receiver is complete with a Drycell Valve; 4½ v. "A" Battery; 45v. Helleson "B" Battery, 1 pair of Western Electric 4000 ohm Double Headphones, 100ft. of Aerial Wire, 6 Insulators, and 20ft. lead-in Wire.

The Headphones are attached to the Set, by means of a Radio Plug and Jack.

No expense has been spared in designing and constructing this Receiver, and only the very best of component parts are used throughout. The 4 Honeycomb Coils supplied with the Set enables you to tune from 200 to 2000 metres.

The Cabinet is large enough for the "A" and "B" Batteries to be fitted inside, which makes the Receiver very compact and portable.

The Vernier Condenser gives wonderfully fine tuning. This Receiver is sold complete with all accessories, and ready for immediate reception.

PRICE - £15

We recommend the AR2 to those desiring a thoroughly reliable and satisfactory receiving set.

Call or write for Catalogue.

FULL STOCKS OF WIRELESS ACCESSORIES ON HAND

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The Valve for Short Wave Reception



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Valve, Type "Q.X."

The construction of the Marconi "Q.X." Valve makes it pre-eminently suitable for short wave reception. The plate and grid leads are brought directly out through the sides of the glass tube, ensuring that the capacity effects in the valve are at a minimum.

The Marconi "Q.X." is a particularly sensitive detector, and is equally effective when used as an amplifier. This means greater range for your set.

This valve is the result of unremitting research and long experience in successful valve manufacture.

Experimenters who want long distance short wave reception install the "Q.X." See that you have one!

Price, 42/6

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Radio Dealers kindly write for Trade Price List





Phones, Redfern 964 and 930.

Official Organ of the New South Wales Division of the Wireless Institute of Australia, with which is incorporated the Affiliated Radio Societies and the Australian Radio Relay League.

VOL. 4 No. 26.

FRIDAY, OCT. 10, 1924.

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EDITOR: A. W. WATT The Editor will be glad to consider Technical and Topical Articles of interest to Australian Experimenters. All Manuscripts and Illustrations are sent at the Author's risk, and although the greatest care will be taken to return unsuitable matter (if accompanied by stamps), the Editor cannot accept responsibility for its safe return. Contributions should be addressed to the Editor, "Wireless Weekly," 33/37 Regent Street, Sydney, N.S.W.

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EDITORIAL

SUMMER RADIO SALES

THE white winged yachts on the harbour during the last two week ends mark the passing of the cold weather and the entrance of Summer. On the beaches the advance guard of the vast army of surfers has already gingerly taken the first plunge, and the motorists are studying road maps preparatory to week-end excursions into the Blue Mountains and along the Coast. The claims of the home will shortly be displaced by the call of the outdoors; wireless receivers will for a time be shelved in favour of beach umbrellas, cameras and fishing rods—that is, unless something is done towards popularising wireless during the summer months.

In other words, if broadcasting as an indoor entertainment loses its lure during the warm season when people are averse to remaining in the close atmosphere of the home, then, in order to keep the wheels of industry turning, and to build up the popularity of broadcasting, means must be devised whereby the public can be shown, that it is quite possible to associate broadcast listening with the usual summer time outdoor hobbies.

The problem of maintaining radio sales in the summer months is not a new one. It was encountered and overcome to a large extent in America by publicity in Wireless and other journals, by dealer co-operation, and by the co-operation of the broadcasting stations, a combination that could accomplish anything within reason. In Great Britain, where the falling off of sales during summer has been most marked, the position has already been dealt with in much the same way, although results were not to be compared with those achieved in the United States, due, it is stated, on the one hand to a less effective campaign, and on the other to national temperament, optimism is expressed with regard to next year. However, in both countries, much valuable time was lost in the first instance, through procrastination and lack of organisation.

In Australia, and particularly New South Wales, the problem is one that will inevitably call for serious consideration, and so that dealers may not be

caught napping, it is advisable that the question of a solution should be discussed now.

The first item requiring adjustment is the broadcasting itself; while nobody can deny that under the present circumstances, transmissions from 2FC and 2BL are as satisfactory as can reasonably be expected, it must be apparent that, since their financial return depends to a very considerable extent upon the volume of sales put through by the dealers, then, for their own benefit, quite aside from their obligations to the broadcast subscribers, they must make the first move in the direction of popularising summer radio.

The week-end programme of both stations indicates the main avenue whereby improvement or enlargement may be effected. From both the Sydney broadcasting stations, between the hours of 10.30 p.m., Saturday and 7 p.m., Sunday, except for the usual Saturday night programmes, there is dead silence; a complete hiatus. Both stations open up between 3 p.m. and 5 p.m., Saturday for the dispensation of sporting results (interspersed with pianola records) which after all, are of interest to merely a section of the listeners, and could scarcely be quoted as selling points by traders. Now, since to the ordinary common or garden John Citizen, summer represents mainly out-door week-ends, it seems obvious that, if he is to be initiated into the undoubted pleasures of outdoor Radio, then both 2FC and 2BL will require to speed things up a little so that the inducement will be there to persuade him to seriously view the matter from a set-purchasing standpoint; in other words, what will be required is Saturday afternoon and Sunday musical programmes from our two local broadcasting stations. This being assured, then the way is open for the dealers to concentrate upon the question of pushing summer sales, and incidentally enlarging the income of the broadcasters; this latter point alone might serve as a lever to oil the wheels of progress.

Dealers, in co-operation, can do a very great deal towards assisting the industry over the trying summer period. The set which would appeal to the outdoor enthusiast would undoubtedly be the

portable, dull emitter valve type, which has proved its worth elsewhere. The week-ender does not want to be faced with the necessity of transporting an accumulator to and from his rendezvous. Something light and easily packed in a car or launch and used in conjunction with either a frame aerial or the easily erected covered wire type should prove of popular appeal. It is interesting to note that one large Sydney firm is planning to concentrate upon this type of receiver during summer.

However, this is only one of the many avenues which could be exploited to push summer sales. Another direction in which dealers could profitably move—and one that seems to have been somewhat overlooked—is window display. In the musical instrument retail trade, where most things are fairly highly priced, the competition is keen, window display is brought down to a fine art and is a very effective force in selling. The automobile, furniture, and electrical houses are also put to the necessity of showing attractive windows. The player piano window displays are famous, and we were all familiar with the G.E. Fan display last Summer; its very appearance suggested coolness, and filled one with a desire to buy. Why could not Radio Window displays possess an equally irresistible appeal? It is simply a matter of discarding old notions and practising modern methods.

The slogan "Buy Books" adopted last Christmas by the Book Traders' Association proved productive of splendid results, and was largely carried out by window posters. Could this idea not be applied to the wireless trade? The slogan "Make it a Radio Christmas" was the lever by which the volume of American sales was almost trebled. Something similar can be done in Australia.

But, as we have pointed out before, the first and main essential is Co-operation—Co-operation between broadcasters and traders. There can be no room for bickering, or for comparison between the quality of transmissions from different stations; traders and broadcasters are dependent each upon the other, and if this is realized, and if it is desired to avoid a falling off of sales during Summer, then the sooner both parties make a move towards closer co-operation, the better for the wireless industry.

—:—

LEICHARDT AND DISTRICT RADIO SOCIETY.

Members of the Leichardt and District Radio Society held their 100th general meeting at the club-room, 176 Johnston Street, Annandale, on Tuesday, September 30th, when Mr. E. J. Fox de-

livered the fourth lecture of the syllabus before a good attendance of members.

The subject of the lecture was "Telephones," and Mr. Fox gave a very interesting and instructive description of the various types of telephones used in connection with radio work, as well as an excellent explanation of their action. The lecture was followed by the usual batch of questions after which a vote of thanks was carried by acclamation.

Members are reminded that the Society's second annual meeting would be held on the following night.

On Tuesday night next the Society will hold its 102nd general meeting, when Mr. W. J. Zech will deliver the fifth lecture of the syllabus—the subject on that occasion to be "Crystal Circuits and their Construction." Mr. Zech is the Society's Hon. Secretary, and he invites inquiries to be addressed to him at 145 Booth St., Annandale.

—:—

CULLEN'S SLOGAN COMPETITION. FINAL RESULT.

FIRST PRIZE (3 Valve "Signal" Receiver, complete)—J. Riddle, Rawson St., Epping, N.S.W. Slogan: "In Wireless you have my word for it."

SECOND PRIZE (pair of W.E. Headphones).—H. W. Keene, Girraween, N.S.W. Slogan: "Say it with Wireless."

THIRD PRIZE (Novelty Crystal Set).—Fred Saunders, "Craigneath," Springdale Road, Killara, N.S.W. Slogan: "Where Wireless Waves A Welcome."

Mention should be made of the fact that the slogan sent in by H. W. Keene was almost identical with that forwarded by P. R. Brown, Islington, Newcastle. However, it was decided to award the 2nd prize to Mr. Keene. The work entailed in sorting out the entries was tremendous and, as among the hundreds received, there were many excellent attempts, it was a real task to select the winner.

In offering congratulations to the fortunate ones, I would like to say to those who failed, "Tis better to have tried and failed, etc."

Please let me also express my gratitude to the many who made complimentary remarks about this paper. It is indeed very pleasing to know that "Wireless Weekly" has friends all over Australia.

A. W. WATT.

HEADQUARTERS
Room 24 2nd Floor
82 Pitt Str.
SYDNEY N.S.W.



Phil Renshaw Hon. Sec.
Box 3120 G.P.O. Sydney
Phone B 2235
Art. Perrett Publicity Officer

THE letter appearing over the signature of H. W. Beamish, in the issue of September 26th, leads one to ask whether the good work accomplished by the Wireless Institute of Australia is sufficiently known in experimental circles. The N.S.W. Division in particular has always been a very live body and consists almost entirely of ardent experimenters. As far back as 1910 the N. S. W. Division of the Institute was formed at a meeting held in Falmouth Chambers, Pitt Street, the first Secretary being Mr. W. H. Hannam. They soon moved to more commodious chambers in Denham Chambers, Phillip Street, and the work was carried on actively there until the war broke out in 1914. Shortly after the war broke out, a very Spencer Nolan, in Oxford Street, when it was deemed a memorable meeting was held in the offices of Mr. Nolan to abandon all activities, and at which every member offered his services to the authorities in the sphere of wireless. Those who held early experimental licenses will remember that the whole of the activities of experimenters were curtailed by the authorities during the war period, and it was quite impossible to carry on the work of the Institute under these restrictions. At this time, Mr. Malcolm Perry was Secretary of the Institute, having taken over the duties from Mr. Hannam, when the latter joined the South Polar Expedition under Mawson. Of the original Council, it is interesting to note that Mr. Charles MacLurean and Mr. Harry Stowe have held office continuously ever since. After the war, the Division was re-formed and the work was actively carried on with beneficial results.

In the year 1922 the Division was incorporated, this step marking real progress in the activities of the Institute. The more recent history of the N.S.W. Division is more widely known. The very successful exhibition held at the Town Hall at the end of last year brought the activities of the Institute prominently before the public and the results proved very gratifying. The work of the Division grew to such an extent that in April of this year it was found necessary to open offices in Pitt St.,

where the headquarters of the N.S.W. Division are now situated.

Another forward step was made when the various wireless and radio bodies in the State were gathered together and the affiliation scheme took definite form. At the present time there are 19 clubs affiliated with the N.S.W. Division of the Institute and the work which is being done by the Delegates' Council is of an extremely important nature.

The Radio Relay League has been taken over in toto and is being placed upon a firm foundation, and the collection of instruments gathered by the Institute is unique in many respects. The programme which lies before the executive is a comprehensive one and it is anticipated that many important steps will be taken in the near future. This much will serve to indicate the scope of the activities of this Division.

A quotation from the Articles of Association shows that membership shall be of two grades, as follows:

(a) Members: Bona-fide experimenters or those interested in the scientific study of wireless communication, either professionally, or otherwise, who shall have attained a standard equivalent to that necessary for a second-class operator's certificate and who have attained the age of 18 years. The Council shall have power to investigate intending members' qualifications (also on being raised from one grade to another) and its decision shall be final.

(b) Associate Members: Those interested in the scientific study of wireless communication not eligible for full membership and not under fifteen years of age. Associate members shall have no power to vote at any meetings nor shall they be eligible to hold office in the Institute.

Candidates for election must be of British nationality and shall be nominated in writing by a proposer and seconder, who shall be members of the Institute and to whom the candidate must be personally known except as provided in Article 6 of these presents.

The fact that practically all applications for membership are for the grade of full member emphasises the fact that the benefits accruing from membership are recognised by those who have the interests of wireless at heart. Hence it should be the aim of every experimenter to qualify for membership and to seek the same so that he may not only benefit himself by linking up with such a live and go-ahead body but that he may be in a position also to further the interests of the science to the best of his advantage. Experimenters should all be gathered together in one united body and the best way of doing this is to link up with the premier organisation of the State.

October General Meeting.

The October General Meeting will be held at the Royal Societies Hall, 5 Elizabeth St., Sydney, on Thursday, October 16, at 7.45 p.m., when Mr. J. W. Robinson will deliver a lecture on "Modern Broadcasting." It will be recalled that this lecture was unavoidably postponed some months back, but the fact that Mr. Robinson has been able to gather more information in the meantime should render this evening a particularly enjoyable one.

NOTES.

Congratulations should be extended to Mr. George Challenger, 2GC, as he reports that he has received two QSL cards from Melbourne when he was working 2EF one night recently with an input of 4.7 watts. Considering the fact that X's were extremely bad in the southern capital on the night in question and that his carrier wave was mistaken for a local transmitter until his call sign came through, proves that he has "some punch." (By George, he has.)

Mr. H. R. Gregory, 2ED, advises that his station will be closed down for about a month. He is leaving on a trip to the southern part of this State and Victoria, and hopes to get in touch with some of the experimenters during his travels.

A. H. PERRETT, Publicity Officer.

Continuous Waves

BY "CATSWHISKER."

CONTINUOUS wave or C.W. transmission is the latest development in the wireless world. C.W. transmitters are gradually replacing spark transmitters for the following main reasons:—The gear required for C.W. transmission is very compact. Smaller power will have a range greater than spark transmitters. Amateurs have been able to transmit with decimals of one watt and be heard thousands of miles away, whereas with a low power spark transmitter the range is not great,

and spark transmitters using decimals of a watt are impossible. Therefore, we see that C.W. is more economical.

Another great factor is that a C.W. station can be tuned much more sharply than spark stations. Now, we know that spark signals produce damped or discontinuous waves, and these may be heard on any type of receiver, whereas, as the name implies, C.W. transmitters transmit undamped or continuous waves. In the spark transmitter, the oscillations are produced by the charge and discharge of a condenser.

In C.W. transmission the material used for producing the waves is the very widely known method of valve transmission, or the less known arc system. Another advantage of C.W. is that it can be modulated and audible musical sounds produced which we know as wireless telephony. Now, we all know that C.W. cannot be received on a crystal receiver in the ordinary way as spark signals can, but if we interrupt the C.W. or make it periodic by making and breaking the flow into the transmitting aerial, an audible note is produced. This is called "Interrupted Continuous Wave," or more commonly I.C.W. But, you will say, "We can hear C.W. by using a valve detector. Why is that?" Well, when our valve detector circuit is used without reaction, we are no better off for C.W. reception than our friend with the crystal receiver. It is seen that we need our valve capable of oscillating or transmitting before we can read C.W.

You have all heard the howl that is produced by a regenerative receiver when a "carrier wave" is picked up. Now, a carrier wave is merely the C.W. sent out by a broadcasting station. When no transmission is taking place we get only the C.W., but when speech is transmitted we notice the C.W. broken up in places if our valve is still oscillating. We are still getting the carrier, but it seems wobbly. Now, this is caused by the speaker. His voice is being modulated—that is, the speech vibrations are being impressed on the carrier wave and are being broken up into a sort of I.C.W. of varying frequency. If we stop our valve oscillating, we hear clear speech. That is the way to receive modulated C.W., with the valve not oscillating. When the valve oscillates (this is stale news to most readers) we destroy the clearness, so see that your set is not in a state of oscillation when you are receiving music. Not only does the music become mushy, but we must remember that our own receiver is sending a carrier wave out, too, and that the neighbours are being interfered with.

The carrier from an ordinary receiving set, when badly handled and allowed to oscillate, will be audible for miles round. For C.W. work you must have some sort of local oscillator. This can be by means of a separate oscillator or heterodyne near the receiver, or by a regenerative receiver. When a regenerative receiver is oscillating, C.W. may be received without a separate heterodyne, but do not allow your valve to oscillate more than slightly. Again, think of the neighbours and, incidentally, yourself, for when your valve oscillates violently, you cannot receive C.W. signals with maximum strength and you are causing interference.

Now I will give you the reason why a squeal or howl is heard when a carrier wave is picked up. Continuous waves are continuous in amplitude—I mean that the amplitude of each wave is the same until the action ceases, whereas in a spark wave train the amplitude is great, and gradually gets less and less until it dies away. Fig. 1 shows a continuous wave, and Fig. 2 shows a damped or spark wave.

Now, suppose we listen on 300 metres and we hear a carrier. The frequency of the vibrations is 1,000,000 per second, and when that is rectified by a crystal or valve the result is still radio frequency or inaudible sound.

Have you heard the noise produced by two aeroplane propellers running at a slightly different speed? We hear a buzz much lower in note than either of the two.

Well, we have a continuous wave of 1,000,000 vibrations per second. If we tune our set to 300 metres and make our valve oscillate, we send out a wave of 1,000,000 vibrations per second. As the vibrations of our receiver are similar to those of the incoming wave, we hear nothing, but if we alter our wavelength so that we send out 999,900 vibrations per second, we have a beat note of 100 vibrations per second, which is an audible note. If we alter our wavelength again so that we produce a vibration of 1,000,100 per second, we still get a beat note which is audible.

Now, this method of reception of C.W. signals is called the "Beat or Heterodyne" method.

You know that by turning the condenser a carrier starts as a high-pitched whistle, and gradually gets to a low growl, then gradually up again to a high-pitched whistle into inaudibility. We also notice that there is one spot in the middle, so to speak, where we get no sound. This is the point where we are on the zero beat, or exact wavelength of the transmitter. The music is always found at a point close to that on which we hear the low growl, as that is the part of the carrier which is modulated.

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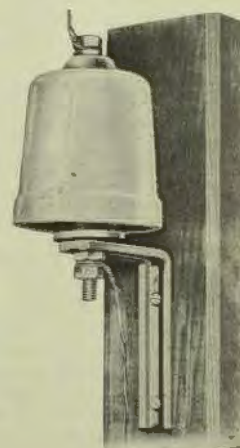
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RADIO FREQUENCY AMPLIFIERS

By W. A. STEWART

ALTHOUGH much has been written concerning radio frequency amplifiers, much more can be said, and I hope that the few facts set down here while by no means new, may prove of interest to those interested in radio frequency amplification.

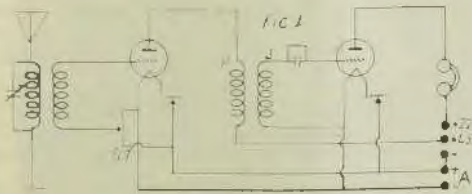
A radio frequency amplifier is one that amplifies the signals in their high frequency, or unrectified state, and is far harder to handle than a low frequency amplifier.

Some suitable means of transferring the high frequency oscillations from the radio frequency amplifying valve to the detector valve have to be provided, and they usually take the form of one of the following.

- Resistance couplings.
- Aperiodic transformers.
- Tuned transformers.

Resistance couplings are not very efficient below 1000 metres so they can be forgotten.

Quite the simplest means of transferring energy is the radio transformer, and this will give quite good results, although probably not as effi-

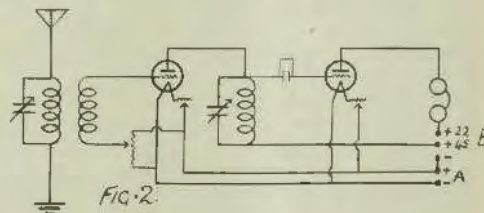


cient as the tuned plate method. The transformer usually takes the form of two coils either straight wound or honeycomb fashion, with or without an iron core. The primary of the transformer is connected in the plate circuit of the radio frequency valve, while the secondary is connected in the grid or input circuit of the detector tube. A potentiometer is used to control the amplifier valve

as it is likely to set up oscillations of its own accord.

One stage of this type of amplification is easy to handle, but two stages are rather ticklish to handle as there is a tendency to oscillate at the least provocation.

The filament control of a radio frequency amplifying valve will usually be found to be rather critical, and it is a good plan to use a separate rheostat for each tube. A circuit using these transformers is shown in Fig. 1, and little trouble should be experienced in wiring it up. Remember to keep all leads as short as possible, and at the same time make the controls easy to adjust. All unwanted capacity should be excluded as capacity makes the amplifier difficult to handle. A stage of radio added to a regenerative detector will act



as a block for any reradiation, but remember that if it is not properly adjusted it will cause more interference than a plain detector.

For selectivity it is a good plan to use a coupled aerial circuit. Only the best gear should be used, and attention should be paid to detail. A single stage of radio is a great help in bringing in distant stations, but has to be handled carefully to prevent self oscillation. Let us take the tuned plate method. In this method, instead of a transformer, a honeycomb coil and a variable condenser are used and are tuned to the same wave length as the received signal. The circuit is shown in Fig. 2, but unless a two circuit tuner is used

in the aerial circuit, the selectivity is not very great.

On the other hand if the aerial is directly coupled to the grid circuit there will be less tendency for the valve to oscillate as it will have to cause the comparative high load of the aerial to oscillate as well, and this will have a somewhat damping effect. One stage of tuned plate is easy to handle, but two or more are extremely critical.

In using a tuned plate circuit it will usually be found that if the same size coil is used in the secondary and plate circuits and the same size condenser is used for tuning (usually a .0005 mfd) the condenser settings for any station will always be the same on both condensers.

If a direct coupled circuit is employed, a small condenser in series with the aerial will tend to make the aerial tuning constant, meaning that any size aerial can be used without affecting the tuning to any great extent.

In a tuned plate circuit employing more than one valve, care must again be taken to see that all unwanted capacity is excluded from the circuit. Low capacity valves and sockets should be employed, and all wiring should be kept as short and straight as possible. On no account use a socket of the "moulded mud" variety, and if valves of the English pattern are employed, the variety having little or no insulation round the pins should be used. Valves of the V-24 type are ideal for radio frequency amplification as they have extremely low capacity leads. Radio frequency is not of very much use below 200 metres as the frequency is so high that the circuit becomes extremely hard to handle.

What really marked the turning point in radio frequency amplifiers was the neutrodyne, in which the oscillations in the amplifier are minimised by small neutralising condensers connected between the grids of the valves. These condensers have an extremely low capacity, being composed of two pieces of 16 S.W.G. wire, over which is slipped a piece of spaghetti, and on top of this a piece of brass tubing about two inches long. These condensers may be adjusted until self oscillation is effectively blocked, and once adjusted, can be left.

In America where the wave length band is confined to smaller limits (between 300 and 600 metres) this form of receiver is extremely popular as it is free from noise and is extremely selective.

The tuning is effected by three dials, and if properly adjusted it will be found that the settings on all three dials will have to be the same, for any station. This form of receiver is not very popular here, as it will not bring in the longer wave length stations; however, it must be remembered that the neutrodyne was designed for the purpose of cutting out self oscillation on the lower wave lengths, and for this job it is admirably suited. For consistent DX work this form of receiver can be relied upon as it is extremely quiet and stable in operation. Above one thousand metres a radio frequency amplifier is easy to handle and a receiver of this type is not required.

Next we come to the much talked of super heterodyne receiver which has been rightly named, "the Rolls Royce of Radio Receivers," and as far as radio amplification is concerned, is in a class by itself.

In a receiver of this type the signals are first detected and then stepped up to a long wave length, of about 5000 metres or so where they are amplified by three stages of radio frequency, and again detected. A separate heterodyne is usually employed for stability, and if a couple of stages of audio are added nine tubes are necessary. It will, therefore be seen that it is quite an expensive set, but is really worth it to the man who can afford it.

So far no means of amplifying successfully below one hundred metres has been published, but I believe that the U.S. Navy have a super heterodyne receiver which operates quite easily on 50 metres, and is extremely selective.

Speaking of radio amplification on short waves—it does not seem necessary, and it will usually be found that nearly all the DX records have been done on a detector and one or two stages of audio. When station 2AC (N.Z.) worked with the Argentine amateur he used a detector and one audio, and he held communication for some considerable time.

Stuart Ballantyne, who may be accepted as an authority on short wave transmitting and receiving tells us that "a properly handled detector using regeneration is equal to if not better than two stages of radio amplification and a plain detector circuit," and he ought to know.

Properly designed, radio frequency amplifiers will give good results, but, as with any set, attention to detail is important, and only the best components should be used for maximum results.

A SINGLE VALVE REFLEX SET

By "INSULATOR."

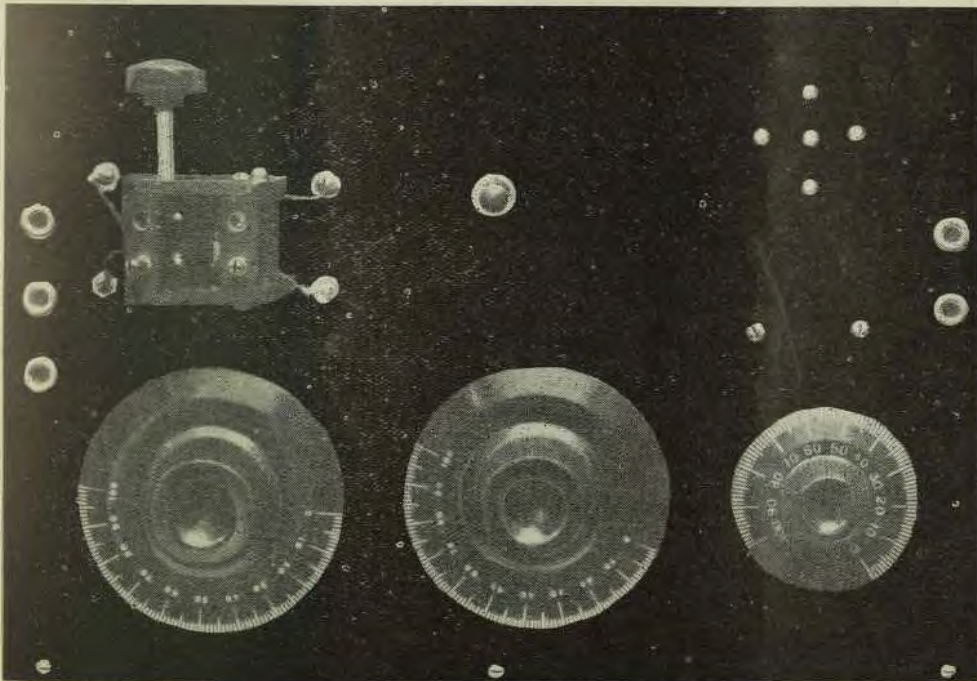
EVERY Saturday at about 2 p.m. I arrive home laden with parcels the contents of which are made up into a receiving set of some description. My week ends are spent in this way, and this week end I made a dual amplification or reflex receiver, and as I am writing this I am listening to 2BL on a loud speaker quite comfortably. Not too bad for a single valve set.

Although this set employs only one valve, the valve is used in conjunction with a crystal detector which is unparalleled from the point of view of purity in music, etc. Being reflexed the valve in the first instance amplifies at radio frequency, the crystal now detects and the impulses are fed to the valve through the audio frequency. It will, therefore, be understood that this method makes

the most of a single valve, this being something which will appeal to all.

Here are a list of parts I made use of:—

- 1 piece of bakelite, 13 x 9 x 3/16.
- 1 piece of bakelite, 5 x 1 x 3/16.
- 2 .0005 K.B. Variable Condensers.
- 1 35-ohm Frost Rheostat.
- 1 Remler Panel Mounting Socket.
- 1 Igranic Audio Frequency Transformer.
- 1 Foote Variotector.
- 1 2-coil Holder United.
- 2 4-inch Dials.
- 1 2½-inch Dial.
- 4 Terminals.
- 5 Clix Sockets.
- 1 Quickheat 100,000 ohm. Resistance and clips.



Front View of Panel

- 4 Small Binding Posts.
- 1 Wetless Fixed Condenser, .001.
- 1 Wetless Fixed Condenser, .002.
- Baseboard, wood, screws, etc.

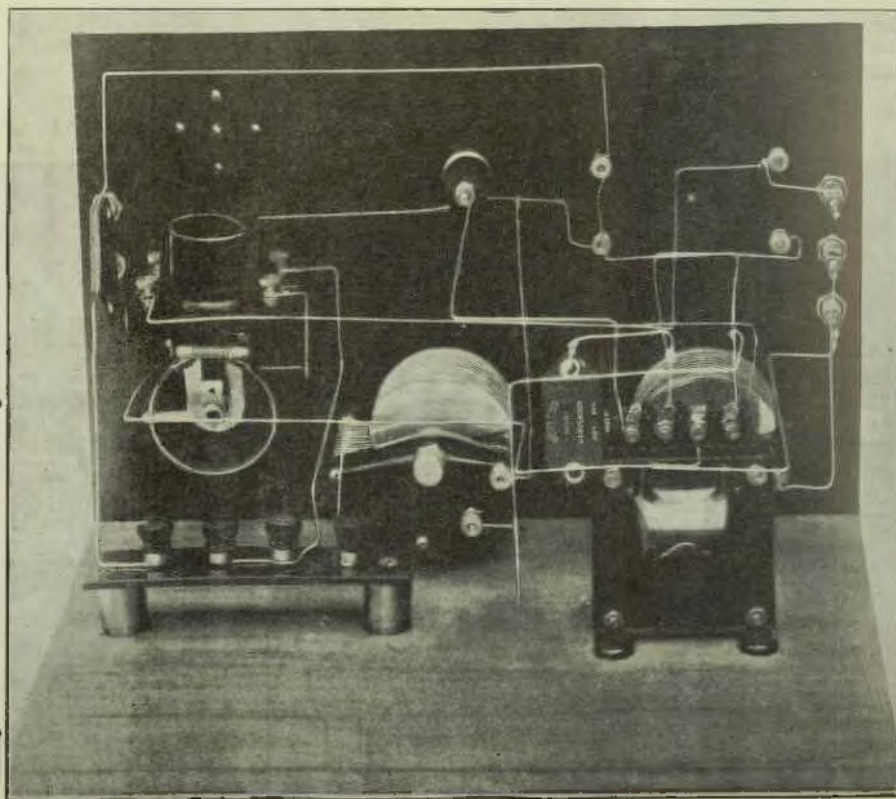
While not binding you to the actual brands of material which I used, it may be as well to advise you that reflex circuits depend greatly on the action of the transformer used. So always procure a good brand. Jefferson 4 to 1, Gilfillan's 6 to 1 and All American transformers should function splendidly. Instead of using a series parallel switch, I have once more resorted to the three terminals or rather clix sockets for this purpose.

The photographs will show you just how my set looked when finished. If you follow this article carefully you will be able to produce one just like

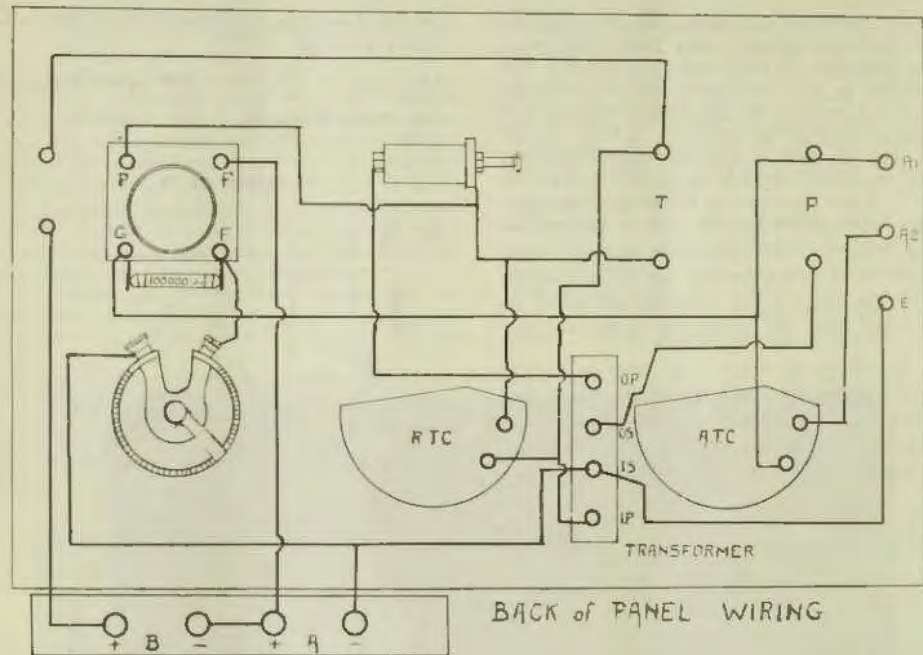
it. So here goes.

Square and trim the panel "in the good old fashioned way." Mark out like Fig. 3 and drill. In marking out never use pencil under any circumstances, as if you do so, considerable loss of signal strength will result—and signal strength is like money—no one can afford to lose any (Scotsman again). Polish this panel with Brasso and mount the 5 clix sockets, 2 variable condensers, rheostat and variotector.

Before putting the 2-coil holder on, connect short pieces of flex from the plug screws to the respective binding posts alongside (see Fig. 1). Pick up the socket and underneath the terminal G solder one of the clips for the 100,000 ohms. resistance. To the terminal marked F opposite G sol-



Back View of Panel.



Check over the circuit after wiring and now try out. Use a 201A radiotron and connect up your batteries. Aerial goes to A2 and earth to E, leaving A1 free. Plug in a 35 turn coil in the primary and a 50 turn in the re-action. Keep the primary away from the re-action and tune with both condensers until you find the signal. Now turn the little black knob on your variotector until the loudest signal is heard. Lock it with the locknut. Gradually bring your primary coil closer to the re-action coil and retune with your condenser. If a very persistent buzzing takes place, change over the connection of the primary of the transformer. All reflex circuits will buzz if the re-action coil is too closely coupled to the primary, so watch this.

I have had this receiver tested by a well known experimenter, whose report is published in this issue, and his remarks should be of interest. I myself found 100 volts to be ideally suitable for loud speaker results in the average sized room. Of course, don't expect to disturb the neighbours with

your loud speaker as it is designed to give sufficient volume for the usual room and not for a public hall. I am sure all who build this will be satisfied with the resultant sound. And one last word—don't forget the crystal is the mainspring of the whole outfit, so see that you are on the most sensitive spot.

Next week I will tell you how to make a receiver embodying the S.T. 100 circuit and the week following my own receiver will be described.

TEST REPORT.

On test the set described above tested by me on an aerial having the average height of 15 feet and 50 feet long, gave loud speaker strength on a loud speaker, the transmission of 2 RA and 2BL leaving nothing to be desired. Plate voltage was 75. At the time of test I did not have the necessary coils for Farmers, but I have no doubt that

this station will also produce loud speaker results. I found that on increasing plate voltage signal strength increased accordingly, so would recommend 100 volts.

A. W. HEMMING,

Secretary and Treasurer, Marrickville and District Radio Club.

Eliminate "B" Batteries

RADIO circles in both England and America are more or less excited over the prospect of discarding the high voltage "B" battery through the use of a four element tube and a newly developed circuit.

For several months past the circuit has been given widespread publicity in England, having been first announced by the technical editors of a radio journal who developed the circuit and have called it the "Unidyne" principle. In America it is known as "Solodyne" principle, both terms meaning "one force" and indicating that but one battery is used.

Experimentation with the circuit in England was not retarded by the lack of four-element tubes, as such tubes have been on the market there for some time, the original set, a two-tube regenerative affair, using only an "A" battery, was demonstrated to the press and prominent radio people with very satisfactory results, it being stated that a broadcasting station was received.

From all reports a one tube set using the "Solodyne" principle is equal in performance to the ordinary one-tube regenerative receiver using 3-element tube and "B" battery.

It would appear, therefore, that if this set is stable in its operations and lacks "tricky" characteristics, that we will presently find the "Solodyne" in use in this country. Provided of course, that four element valves are procurable.

Now as to the principle itself. It is not correct to say that there is no "B" battery in the "Solodyne" circuit, because the "A" battery is in reality also the "B." No tube will function with zero voltage on the plate. There must be some plate potential, and in the "Solodyne," it is the voltage of the "A" battery. In the ordinary tube this causes a tremendous reduction in the efficiency of the tube. In the "Solodyne" system, every effort is made to restore this lost efficiency.

First, an auxiliary grid is placed in the tube, in very close proximity to the filament. This grid is connected directly to the positive of the "A" battery, and being positively charged, therefore reduces the space charge within the tube and greatly lowers the resistance to the electron flow from filament to plate. The circuit proper is very simple, every means being used to preserve and amplify the comparatively feeble plate current variations.

Among the claims made for the system, are the absolute lack of all tube and battery noises, and hence clearer and better reception of DX. The circuit is still in the experimental stage, however, but there are good prospects for the development through widespread research and experimentation and the ultimate practical application. Meanwhile, the real "experimenters" are "itching" for a four-element tube.



RADIO 4AD (N.Z.)

REAL PROGRESS

By A. BURROWS.

IT seems a strange fact that the further wireless progresses the simpler it becomes. Which doesn't mean to say that a super heterodyne is simpler than a single valve non-regenerative circuit, or a neutrodyne less complicated than a crystal set. But it certainly does appear that the tendency of wireless progress nowadays is towards the "straight" sets, which don't profess to be super sets, yet which in the end generally turn out to be more efficient—taking everything into consideration—than those which attempt to combine the work of four valves into one.

The truth is that the attraction of the more costly and elaborate sets lie not in their increased efficiency—for in proportion to the added cost and trouble, they are seldom more efficient—but in the fascination of having something more complicated to handle. A super-heterodyne undoubtedly looks well, costing quite a small fortune (which is not always a disadvantage in the eyes of some fans—sometimes it seems to be a recommendation), and to make and get it into operation is often a joy lasting for six months—even if it works then. Yet, after all, regarding it from a pure utility basis, is it any improvement on the straight-out five valve set? And the same can be said of practically all the "supers" and most of the "dynes" and "plexes." In a word, they are fads.

Necessity for Results.

Some of the recent discoveries demonstrate this. The high-tensionless valve is, after all, a simplification of the ordinary three-electrode vacuum tube, and if this invention proves of commercial use, it means that a big percentage of the improvements and additions to the conventional valve will be of little or no use. In other words, so much time will have been wasted because the more elaborate method was chosen (for the idea of eliminating high-tension from vacuum tubes is not by any means new) and developed, in preference, it can almost be said, to the simpler method. It still has to be proved, of course, that the two-electrode valve can be made efficient, but if it had, in the earlier days, received the attention it appears to have deserved, it would probably have been on a par with the ordinary type of receiver by now.

The much neglected crystal is another instance. As soon as valves became fashionable the world's cleverest minds immediately forsook research of the possibilities of the humble catwhisker, and devoted their energies to devising complicated valve outfits, each being very little better than the last. And only now, if the American periodicals are to be believed, is the crystal coming into its own. The fact that a crystal set will oscillate on long wave lengths has been known for a long time; and now the fact is regenerated—with certain improvements—and great things are alleged to be expected of it. And the pity is that the last five years have not been devoted to the study of the crystal rather than to that of the valve. It illustrates the lure of the intricate circuit—with the resultant cost to the useful and commercial side of wireless.

Now, this all seems to point to the partial failure of experimenters to realise what is really wanted of them. They have, it would appear, followed more closely their own inclinations rather than the dictates of commonsense as to what actually are useful inventions. There is no gainsaying that a super-heterodyne or a pliodyne or an autoplex circuit is far more interesting and fascinating than a set which cannot get out of adjustment, and which is a few hundred times as easy to operate. But, for the purposes of general use—and radio must now be regarded as a public utility—which gets nearest to its object? Which represents the greatest advance?

It can be said, of course, that the vast majority of experimenters dabble in their hobby simply for the love of it; that experiments of a commercial character seldom interest them. Which is quite true, and, to a certain extent, quite as it should be. But it has always to be remembered in these days when amateurs have to bow the knee to the broadcasters (so to speak), that they must justify their existence. Every day the ether is regarded more as a public highway, and anyone who trespasses thereon must have their reasons and qualifications. And soon experiment, no matter how interesting it may be in itself, will not be taken as sufficient reason unless there is some prospect of worth-while results.

Avenues for Experiment.

In the past the popular excuse for any experimental, or at least, amateur, infringement upon broadcasters' rights, has been that "only for the experimenters there would not have been any broadcasting." This, up to a point, has been true, but it is a long time now since an amateur distinguished himself (apart from DX records) in any way calculated to appeal to the public as a reason for existence. The usual field of experiment has, after all, little attraction for the ordinary broadcast listener. He is seldom interested in long-distance work; low-loss instruments—because of the appearance and bulkiness—don't appeal to him, and anything pertaining to code work bores him stiff.

So, while not forgetting their own activities, it seems that experimenters would do more for themselves in paying a little more attention to that part of radio work which has a more universal interest. There are decided lines which in the eyes of the world mean progress, and these lines seldom run parallel with what are recognised as experimental interests.

Modulation, strength, sharpness of tuning (indirectly) can all be said to be items representing general utility. Then, as matters often foreign to the average experimenter, can be mentioned, compactness of gear; simplicity of operation, strength of gear, and the art of laying out a panel attractively. Last, and perhaps the most important comes cost; and this is probably the item more generally disregarded by experimenters. There is little credit in efficient apparatus if the expense is high, or if it is cumbersome or expensive in upkeep. To gain a combination of cheapness, efficiency and compactness should represent one object of the really useful experimenter.

And there are dozens of other avenues which will occur to the man determined to make a name for himself apart from a large collection of QSL cards, or a low loss receiver which is an offence to the eye. Progress, after all, is measured by the world's standards—not by those of a comparative handful of experimenters.

FOLLOWING THE DEAR OLD DAD.

The photographs below show the juvenile members of the family of 2CM, Chas. Maclurcan. They seem to be very interested in the science that keeps their dad up late at night. 2CM says they already know the code and that he spends every Sunday morning sending them dots and dashes.



THE CRYSTODYNE PRINCIPLE

OSCILLATING CRYSTAL SENDS AND RECEIVES.

Courtesy "Radio News."

SEVERAL experimenters have observed that some contacts, such as crystal and metal or crystal and carbon generally employed as detectors may produce undamped oscillations of any frequency, exactly as the vacuum tube oscillator. The same contact may also be utilised as an amplifier. Oscillating crystals are not new since they were investigated as far back as 1906 by well known engineers, but it was not until lately that a Russian engineer, Mr. O. V. Lossev, succeeded in finding some interesting uses for oscillating crystals. The construction of the apparatus by means of which oscillations may be produced with crystal as a generator seems quite simple and should be of great interest to our readers.

Among the numerous contacts studied are pyrite carbon, chalcopyrite-zinc, galena-carbon, or zincite-carbon. The zincite-carbon and zincite-steel contacts seem to be the best producers of strong oscillations. The construction of the contact is similar to an ordinary crystal detector in which a springy piece of wire rests on a crystal. One may use as the catswhisker, a piece of carbon taken from a broken incandescent lamp, the carbon being a piece of the filament; an ordinary piece of steel wire is also suitable.

The zincite crystals may be selected but it has been proved by experiment that even a poor crystal is made much better if it is fused in an arc, and scraped to remove the outside black layer which is not a good conductor. One may also break the crystal and use the inside surface. It is necessary to fuse the crystal in binoxide or peroxide of manganese.

To find the best conditions in which to use the crystal, one may trace its characteristic curves showing that when submitted to a certain voltage the contact acts as a negative resistance. This negative resistance explains why the crystal may be used to produce oscillations. These curves are generally similar to that of an arc or a dynatron tube. However, it is simpler to try the contact as in an ordinary detector until it functions as an audio frequency oscillator, furnishing a musical

note which is heard directly in the phones. Once the crystal oscillates at audio frequency, it is easy to replace the audio frequency circuit by one of radio frequency so as to have the contact functioning in the ordinary heterodyne manner.

Battery Furnishes Power.

Fig. 1 shows the connection of a circuit which is made to oscillate by the energy produced from a

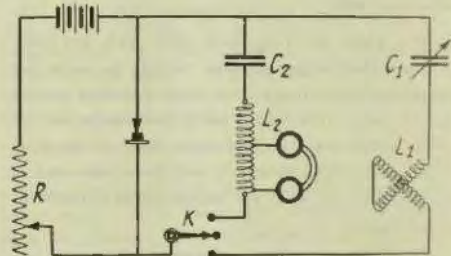


Fig. 1

Diagram of the oscillating crystal circuit. As may be seen, the hook up is similar to that of an arc transmitter.

crystal connected to a battery. The battery may be composed of dry cells such as a "B" battery, provided its inside resistance is not too great. The voltage to apply on the contact is generally between 5 and 30 volts, depending upon quality of the crystal. In the circuit of Fig. 1, the constants are as follows: R is a rheostat of about 3000 ohms. resistance with variable contact. L2C2 is the audio frequency oscillating circuit, while L1

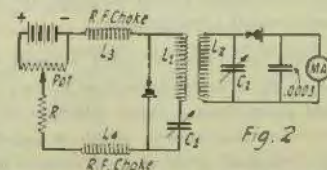


Fig. 2

The amount of energy produced by the oscillating crystal may be measured with a microammeter connected as shown in this diagram.

C1 is the radio frequency circuit. By means of a switch K, either of these may be connected to the crystal. L2 may be a 1-henry inductance; C2, a 2-mfd. condenser; C1, a .01-mfd. condenser; and L1, a 5-millihenry variable inductance. It is preferable to use phones of about 300 ohms resistance in this circuit. By connecting the circuit L2C2, and by varying the tension of the battery and the value of the resistance R, audio frequency oscillations are produced in the circuit. In order to start the radio frequency oscillations in the circuit L1C1, it is necessary to have an extra switch-point not connected to the circuit between the two extreme ones. It is also necessary to have the high frequency resistance of the circuit L1C1 lower than that of L2C2; it is further necessary that the ratio of the co-efficients of self-inductance in the two circuits be equal to the ratio of their respective capacities. It is possible to keep the proper value of inductance and capacity at all times by using a variometer for the inductance L1, and by mounting on the same shaft the variable condenser C1, so that both are turned at the same time, making the ratio between L1 and C1 about constant for any setting.

With the circuit of Fig. 2, it has been found possible to produce oscillations of very high frequency, the shortest wave length obtained being 25 metres. The resistance R has a value of 2,300 ohms. The coil L1 is 2 1/4 inches in diameter and is composed of seven turns of No. 12 copper wire. The variable condenser C1 has a value of .0003 mfd. and L3 and L4 are choke coils used to prevent the high frequency oscillations flowing through the battery circuit. To measure the wave length, a special wave meter was used, composed of a coil L2 which is 2 1/4 inches in diameter, and consists of a single turn of No. 12 copper wire, shunted by a variable air condenser C2 of .006 mfd. capacity. A galena crystal detector is connected in series with a micro-ammeter, with a scale of zero to 100, allowing the operator to find the resonance point.

However, the production of short wave-lengths even with this arrangement is rather difficult although oscillations of lower frequency may readily be produced with the same circuit.

Galena Weak Oscillator.

Some crystals, such as galena, do not produce strong oscillations, although they may sometimes oscillate sufficiently even without any battery in the circuit to produce a beat note when continuous wave signals or a carrier wave are received. This phenomenon, which has been observed several times,

explains why some amateurs using only a crystal detector, are sometimes able to receive continuous waves without an outside oscillator. It also explains how it is sometimes possible to pick up very distant broadcast stations on a crystal set installed in such a location that no radiating receivers or re-radiating structures reinforce the signal. Fig. 3 shows a practical circuit for the reception of short wave C.W. signals with an oscillating crystal similar to the one described above. The crystal may be made to oscillate first by the method explained previously; that is, by listening in the phones when it oscillates at audio frequency, then by means of switches the circuit of Fig. 3 may be connected to the crystal. It should be noted that the potentiometer acts as a vernier when adjusted, because the natural per-

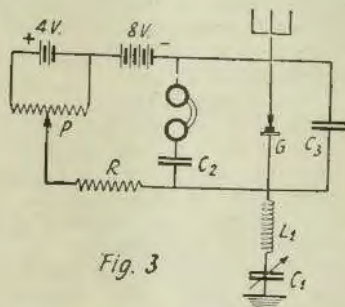


Fig. 3

A practical receiving circuit for the reception of continuous waves with a crystal detector.

iod of the crystal depends upon the bend of the negative part of the characteristic curve; that is, the wave-length decreases if the negative resistance increases. For short wave-length, it is recommended to use a fixed condenser of .003 or .004 mfd. across the detector. This arrangement was used by Fuller who connected fixed condensers across his arcs to improve the efficiency and stability of the circuit.

It is possible to obtain regeneration with this system by adjusting the potentiometer until the detector starts to oscillate. It is found that a strong increase of the signal strength may be obtained just below the oscillating point exactly as in a regenerative circuit. Mr. Lossev also constructed a small transmitter with such crystal contacts and since he gave the information regarding the circuit to a few amateurs in Russia, they have been communicating over short distances by means of oscillating crystal transmitters. The reception is made by means of oscillating crystals connected as in Fig. 3.

PHONES

IN publishing this list we have endeavoured to confine it to those transmitters who are active. Quite a number of those holding transmitting licenses have never even installed the necessary apparatus, and as particulars of these can be of no value, we have purposely omitted them. Any transmitter who is actually transmitting, and whose name does not appear in this list, may have particulars published by forwarding to us. All times mentioned apply to the particular States mentioned, viz., Victoria, Queensland, and Tasmania, same as Sydney; South Australia half an hour behind Sydney; West Australia two hours behind Sydney.

VICTORIA.

- 3.A.B.—William S. Weatherston, David St., East St. Kilda. Metres, 200. Transmits C.W., I.C.W., telephony. Between 7 p.m. and midnight.
- 3.A.P.—Arthur Bent, 14 Coronation St., Geelong West. Metres, 198. Transmits C.W. and telephony. No fixed time.
- 3.A.G.—Alan Frederick Gurr, 244 McKillop St., Geelong East. Metres, 154. Transmits C.W., I.C.W., and telephony. No set time.
- 3.A.M.—G. S. Dohrmann, "Glenville," 2 Hopetoun Av., Canterbury. Metres, 224. Transmits C.W. and telephony. Usually between 6.30—12 p.m. Station closed down between 6.30 p.m. and 10.30 p.m. on first and third Sundays each month.
- 3.A.P.—Ronald David Morris, 61 Bealiba Rd., Caulfield. Metres, 225. Transmits C.W. and 'phone. 10.20 to 12 p.m.
- 3.A.Y.—W. W. Jenvey, "Devonshire," Lord St., Caulfield. Metres, 305. Transmits C.W., I.C.W., fone. 7 p.m.—8 p.m., and 10 p.m. to midnight.
- 3.A.U.—Stanley H. Milligan, Kirkwood St., Eaglehawk, Bendigo. Metres, 168. Transmits I.C.W., telephony. 8 p.m. and 11 p.m.
- 3.B.C.—Brighton Section of Wireless Institute of Aus. (Vic. Div.). Metres, 195. Transmits C.W., I.C.W., tonic train, telephony. Monday evenings after 9 p.m.
- 3.B.D.—E. H. Cox, 5 Gisborne St., Elsternwick. Metres, 225, 205, 180, 150, 120, 80. Transmits C.W., tonic train, and telephony. 11 p.m. to 1 a.m., and 7 p.m. to 9 p.m.
- 3.B.K.—W. H. Cumming, 57 Kooyong Rd., Armadale. Metres, 170. Transmits fone and C.W. One or two nights a week.
- 3.B.M.—H. K. Love, "Lindum," Ferncroft Av., Malvern. Metres, 239. Transmits C.W. and 'phone. 7—8 p.m., almost any evening, or 9 to 11.
- 3.B.P.—J. H. Hood, 6 Alexandria St., East St. Kilda. Metres, 180. Transmits C.W. and telephony. 8—10.30 p.m.
- 3.B.Q.—Maxwell Howden, 10 Hill St., Box Hill. Metres, 115 and 185. Transmits C.W. on 100 watts; tonic train and telephony on 5 watts. 7.30 to 10.30 p.m.
- 3.B.U.—Dermot Conaally, Balaclava Rd., East St. Kilda. Metres, 238. Transmits C.W. and 'phone. 7.30 p.m. to 3 a.m.
- 3.B.Y.—Hector James Holst, 27 Bamba Rd., Caulfield. Metres, 215. Transmits C.W., I.C.W., tonic train, and telephony. 6 p.m. to 12 p.m. ordinarily; other times by arrangement.
- 3.C.B.—W. F. Sievers, 30 Lesney St., East Richmond. Metres, 175. Transmits C.W., I.C.W., tonic train, and telephony. 8 p.m. to 11 p.m. Monday to Friday.
- 3.C.H.—F. W. Clarke, 165 Cardigan St., Carlton. Metres, 235. Transmits C.W., I.C.W., tonic train, and telephony. Any time. (Clarke and Hagblom.)
- 3.C.P.—Clarence Hammer Philpot. Metres, 175. Transmits C.W., I.C.W., and telephony. 8 p.m. to 2 a.m.
- 3.C.Z.—Harold B. Mitchell, 22 Normandy Rd., Elwood. Metres, 205. Transmits C.W. and telephony. Irregularly—usually Wednesday night.
- 3.D.B.—W. V. Hobart-Duff, 27 Westgarth St., East Malvern. Metres, 190. Transmits C.W., I.C.W., and telephony. From 8 p.m. to 2 a.m.
- 3.D.D.—L. F. G. Osborne, Duelling Rd., East Malvern. Metres, 210. Transmits C.W., I.C.W., tonic train, and telephony. Monday, Tuesday, Thursday, Saturday, and Sunday, 8 p.m. to 1 a.m.

- 3.D.V.—Herbert Spencer Beattie, No. 1 Bishop St., Box Hill. Metres, 229. Transmits C.W., tonic train, and telephony. 7 p.m. to 9 p.m. every evening.
- 3.D.X.—J. R. Van Cooth, Wattletree Rd., E. Malvern. Metres, 193. Transmits C.W., I.C.W., and telephony. No special times.
- 3.E.F.—H. W. Maasdiek, 89a Spray St., Elwood. Metres, 228. Transmits C.W., I.C.W., and 'phone. Nightly after 7 p.m. Telephone, X4994.
- 3.E.M.—C. H. Doudney, 7 Dickens St., Balaclava. Metres, 204. Transmits C.W., I.C.W., and telephony. Monday-Saturday, 9—11 p.m.
- 3.E.N.—A. B. Leonard, Box 26, Drouin. Metres, 174. Transmits tonic train. Irregular hours.
- 3.E.P.—L. J. M. Givens, 19 Logan St., Canterbury. Metres, 172. Transmits tonic train and telephony. 7.30 to 11 p.m.
- 3.F.A.—Frank Abrahams, Fitzroy St., St. Kilda. Metres, 180. Transmits telephony. No fixed hours.
- 3.F.M.—R. Ch-de Crespigny, 20 Black St., Middle Brighton. Metres, 194. Transmits C.W. and 'phone. 11 p.m. and 1 a.m.
- 3.H.B.—Henry S. Bird, Watt St., Sunshine. Metres, 165. Transmits C.W. and telephony on Tuesday, Wednesday, and Thursday nights from 7 to 8 p.m., and from 10 p.m. till 11 p.m.
- 3.H.H.—Fred. H. Maughan, 15 Staniland Av., Malvern. Metres, 190. Transmits C.W. and telephony. No fixed hours.
- 3.H.L.—Allan T. Hutchings, "Bryn Avon," Callawadda. Metres, 230. Transmits I.C.W., telephony, and C.W. 7.30—8.30 p.m. every evening, and Thursday 10.30 p.m.—midnight.
- 3.I.D.—John Edward Dane, Toorak Rd., Hawthorne. Metres, 210. Transmits C.W., I.C.W., tonic train, telephony. 6—8 and 10—12 p.m.
- 3.J.H.—J. Holland, "Cotswold," St. Kinnord St., Ls-sendon. Metres, 163. Transmits C.W., I.C.W., and telephony. 7 p.m. to 8 p.m., and 10 p.m. to 11.30 p.m.
- 3.J.I.—Horace Walter Garrett. Metres, 160. Transmits I.C.W. and telephony. 7.30, 8.30, and 9.30 p.m.
- 3.J.M.—B. W. Bryson, 149 Eglinton St., Kew. Metres, 217. Transmits telephony, C.W., and I.C.W. 9 to 10 Thursday evenings, and at other irregular times.
- 3.J.P.—Ernest Mitchell, 14 Kean St., Caulfield. Metres, 220. Transmits C.W., I.C.W., and telephony. Thursday to Sunday inclusive, 7.30 p.m.—11.30 p.m.
- 3.J.R.—Walter John Dunstan, Cameron St., Ballarat East. Metres, 200. Transmits C.W., tonic train, and telephony. 7.30—11.30 p.m.
- 3.J.Z.—Rupert P. Whalley, No. 4 Bridge St., Sandringham. Metres, 210. Transmits C.W., I.C.W., tonic train, and telephony. Friday, 8—10 p.m.; Saturday, 8—11 p.m.
- 3.K.E.—Dennis James Harkin, 90 Keele St., Collingwood. Metres, 166. Transmits I.C.W., C.W., and telephony. Thursday, 8—10 p.m.; Saturdays, 9—11 p.m.
- 3.K.S.—Donald Munro McDonald, 182 Stephens St., Yarraville. Metres, 160. Transmits C.W. (Morse). 11.30 p.m. (Telephony later.)
- 3.K.T.—L. M. Secombe, No. 3 First Avenue, East Kew. Metres, 175. Transmits C.W., I.C.W., and telephony. No set time.
- 3.L.F.—Leslie Roy Freestone, 504 Brougham St., Ballarat. Metres, 215. Transmits I.C.W. and telephony. Friday and Saturday nights, and Sunday morning.
- 3.L.M.—Brian Jermyn Masters (for Malvern Section of W.I.A.), 16 Sutherland Rd., Armadale. Metres, 210. Transmits C.W., I.C.W., tonic train, and telephony. 7 to 8 p.m., and 9.30 to 10.30 p.m.
- 3.L.S.—Reginald Talbot Busch, "Stratford," 20 Wordsworth St., Moonee Ponds. Metres, 210. Transmits C.W., I.C.W., tonic train, and telephony. 7.30 p.m. to 10 p.m.
- 3.M.P.—Stanley Victor Hosken, Queen St., Surry Hills. Metres, 219. Transmits C.W., I.C.W., tonic train, and telephony. 8 p.m.—11 p.m.
- 3.M.S.—Louis J. Moore, Oak St., Seymour. Metres, 240. Transmits C.W. 7 p.m. to 11 p.m., when possible.
- 3.O.T.—Robert M. Cameron, Coonil Cres., Malvern. Metres, 156-190. Transmits C... telephony. Telephony, 9—9.30 p.m. Monday—Thursday; C.W., Friday and Saturday, 9 p.m. to 1 a.m.
- 3.P.J.—V. L. Smyth, 130 McIvor St., Bendigo. Metres, 162. Transmits telephony and I.C.W. Tuesday and Thursday, 7—10 p.m.
- 3.R.P.—Reginald Lewis Payne, 39 Retreat Rd., Newtown, Geelong. Metres, 180. Transmits C.W., I.C.W., and 'phone. 7.30 to 11.30 p.m.; Mondays and Fridays, 9 p.m. to 10 p.m.

- 3.R.Y.—Warne A. Wilson, 300 Dana St., Ballarat. Metres, 230. Transmits I.C.W. and telephony. Mondays and Fridays 8—10, and Sundays 11 o'clock onwards.
- 3.Q.W.—J. S. A. Muir, 10 Young St., Brighton. Metres, 195. Transmits C.W. and fone. 7 p.m. to 1 a.m.
- 3.S.J.—Stanley John Mitchell, 5 Brandon St., Brighton. Metres, 188. Transmits C.W. and telephony. Irregularly.
- 3.S.K.—Ormond Short, 10 Redan St., St. Kilda. Metres, 159. Transmits C.W. and telephony. Evenings and week-ends.
- 3.S.L.—L. W. Southwell, High St., Seymour. Metres, 187. Transmits C.W., I.C.W., and telephony. Usually between 9 p.m. and 12 midnight.
3. Augustus H. Guy, Victoria St., Warragul. Metres, 227. Transmits C.W., telephony, and spark. 8 p.m. and 12 midnight.
- 3.S.W.—Stanley W. Gadsden, 5 Miller Grove, Kew. Metres, 177. Transmits C.W. and telephony. 10 p.m. to 12 p.m.
- 3.T.K.—T. W. Kinsella, Lubeck. Metres, 220. Transmits C.W. and I.C.W. 8.30 to 10.30 p.m.
- 3.T.U.—R. C. Leekie, "Clifstone," Bamfield St., Sandringham. Metres, 175. Transmits C.W. and telephony. Week-ends.
- 3.U.X.—Geoffrey Wm. Steane, Earl St., Mont Albert. Metres, 231. Transmits C.W. and telephony. 7.30—11.30 p.m.
- 3.U.Z.—Oliver J. Nilsen & Co., 45 Bourke St., Melbourne. Metres, 350. Transmits C.W., I.C.W., and telephony. 8—10 p.m. Monday and Wednesday, regularly.
- 3.V.R.—Reginald N. Abbott, St. Elmo Av., Alphington. Metres, 202. Transmits telephony. No special times.
- 3.V.S.—Oliver Jones Philpott, 26 Lumeah Rd., Caulfield. Metres, 218. Transmits C.W., I.C.W., telephony. Saturday and Sunday, 3 to 5 p.m.
- 3.W.T.—William Laurence Tresidder, 13 Nettle St., Bendigo. Metres, 190. Transmits C.W. and I.C.W. 7 p.m. to 7.30 p.m. each night.
- 3.X.F.—Martin Chaffer, 41 Norwood Cres., Moonee Ponds. Metres, 200. Transmits C.W., I.C.W., and telephony. Friday, Saturday, Sunday, and Tuesday evenings.
- 3.X.N.—William G. Lenney, 12 Henry St., Northcote. Metres, 150. Transmits C.W. and telephony. Expects to be transmitting shortly.
- 3.X.O.—Frank J. Adams, 269 St. Kilda St., Brighton. Metres, 181. Transmits C.W., I.C.W., and 'phone. Most evenings after 9 p.m.
- 3.X.Z.—Thomas Foster Gibbon, "Rokeby," Foley St., Kew. Metres, 169. Transmits C.W. and telephony. 9—11 p.m.
- 3.Y.D.—Charles W. Donne, "Ovalau," 3 Hughenden Rd., E. St. Kilda. Metres, 180. Transmits C.W., I.C.W., and telephony. No fixed times.
- 3.Y.W.—J. M. Edgar, High School, Essendon. Metres, 230. Transmits telephony. Usually on Fridays between 8—10 p.m. (Starts in November.)
- 3.Y.Y.—Albert Melville Bush, 54 Brougham St., Bendigo. Metres, 180. Transmits C.W., I.C.W., and telephony. Week days, 7—11.30 p.m.; Sundays, 11 a.m. to 1 p.m., 7.30—11.30 p.m.
- 3.Y.Z.—Allan McLroy McKeown, 54 Yarra St., Alphington. Metres, 190. Transmits C.W., I.C.W., and telephony. Starting on August 1st. 7.45—10.15 p.m. (intermittent), all nights except Tuesdays and Wednesdays.
- 3.Z.E.—H. McGregor, 23 Lambert Rd., Teorak. Metres, 180. Transmits C.W. and telephony. Practically continuous.
- 3.Z.J.—Chas. L. Lempriere, Terrara Rd., Vermont. Metres, 225. Transmits C.W., I.C.W., tonic train, and telephony. Evenings.
- 3.Z.L.—New System Telephones Pty. Ltd., 25/27 Queen's Bridge St., Melbourne. Metres, 375 and 235. Transmits I.C.W. and telephony. 8 p.m. onwards.
- 3.Z.O.—Edward Norman Johnson, Firebrace St., Hershams. Metres, 250. Transmits C.W. and telephony. Monday, Wednesday, and Friday nights, 11 p.m. to midnight.
- 3.Z.R.—S. L. Snaith, 1 Byron St., Footscray. Metres, 175. Transmits C.W., I.C.W., tonic train, and telephony. 7.30 p.m.—11 p.m., Monday, Wednesday, Thursday, Saturday, and Sunday.

QUEENSLAND.

- 4.A.C.—Leslie Waters, Rankin St., Innisfail. Metres, 225. Transmits C.W. and 'phone. 7 to 9 p.m., usually.
- 4.A.K.—J. Milner, Beavick, Kelvin Grove, Brisbane. Metres, 210 and 410. Transmits C.W. and telephony. 10—12 p.m.
- 4.A.N.—Edgar McLean Gibson, Kirkland Av., Greenslopes. Metres, 220. Transmits C.W. and I.C.W. 5.15 p.m. to 6.30 p.m.
- 4.A.P.—T. W. Bridger, A.M.I.E.E., Hamilton Rd., Hamilton. Metres, 410. Transmits C.W. 7 to 10 p.m., generally.
- 4.B.K.—C. O. Randell, Esplanade, Lunisfail. Metres, 410. Transmits I.C.W. and telephony. No fixed time.

Friday, October 10, 1924.

WIRELESS WEEKLY

Page Thirty-One

- 4.C.C.—C. W. J. Isles, Charlton St., Ascot. Metres, 250. Transmits C.W. and telephony. 7—8 p.m., 10—11 p.m.
- 4.C.F.—Lt. Col. Chas. Fortescue, Arthur St., Toowoomba. Metres, 220. Transmits I.C.W. and telephony. Sunday mornings, 10 a.m. to 11.30.
- 4.C.G.—Arthur N. Stephens, Railway Par., Clayfield. Metres, 150. Transmits I.C.W. and telephony. No definite times.
- 4.C.H.—Arthur Ernest Dillon, Brown St., New Farm. Metres, 250. Transmits generally C.W. and telephony, but occasionally I.C.W. Thursdays and Sundays generally, 7—10.30 p.m.
- 4.C.K.—Edgar Lewin Norris, Hume St., Toowoomba. Metres, 200-240. Transmits I.C.W., tonic train, and telephony. Telephony, Sundays 7—8 p.m., week nights after 10 p.m.
- 4.C.M.—Dr. Val McDowall, Preston House, Queen St., Brisbane. Metres, 210. Transmits I.C.W. mostly. 7.15 p.m. to 7.30 p.m. every night.
- 4.C.S.—J. A. Geraghty, Christian Brothers' College, Gympie. Metres, 250. Transmits I.C.W. and telephony. 8 to 9 p.m., Tuesday and Thursday.
- 4.C.W.—Albert Buck, Geebung, N.C. Line (via Brisbane). Metres, 209. Transmits C.W., I.C.W., and telephony. 7 p.m. till 8 p.m. nightly.
- 4.D.O.—Harold Learmouth Hobler, 8 Lennox St., Rockhampton. Metres, 240. Transmits C.W., I.C.W., and telephony. From 7 p.m. onwards.
- 4.E.G.—Edward Gold, Box 163, Toowoomba. Metres, 250. Transmits C.W., I.C.W., and telephony. 6.45 to 7.15 week nights, 8 to 9 Sunday.
- 4.E.Z.—Queensland Institute of Radio Engineers, Observatory Tower, Brisbane. Metres, 245. Transmits C.W., I.C.W., and telephony. No specified night; generally Wednesday, Saturday, and Sunday, 8 to 10.30 p.m.
- 4.F.E.—Y.M.C.A., Brisbane. Metres, 350. Transmits C.W. Monday, 7.30 to 9.30 p.m.
- 5.A.H.—Frederick Williamson, Dequetteville Ter., Kent Town. Metres, 190. Transmits C.W. and telephony. Every Tuesday, 8—8.30 p.m.
- 5.A.I.—Henry Howard Lloyd, Trinity St., College Town. Metres, 225. Transmits telephony and C.W. Evenings.
- 5.A.V.—Clement E. Ames, 20 Grange Rd., Hindmarsh. Metres, 245. Transmits C.W. and telephony. Tuesdays 8.30 to 9 p.m., Thursdays 8—9 p.m., and Saturdays 8—9 p.m.
- 5.B.D.—Frank Earle, 6 Bakewell Rd., St. Peters. Metres, 220. Transmits C.W. and telephony. Generally 8 and 10 p.m., except Wednesday and Friday.
- 5.B.F.—Francis E. Miller, Eleanor Ter., Murray Bridge. Metres, 440. Transmits C.W., I.C.W., and telephony. 6.30—7.30 and 9.30 to 10.30 p.m. daily.
- 5.D.N.—H. L. Austin, No. 8 Parade, Norwood. Metres, 200. Transmits I.C.W. and C.W. Friday, 7.30 to 8 p.m.
- 5.B.I.—John Dalby, S.A. School of Mines. Metres, 195. Transmits C.W., I.C.W., and telephony. All hours.
- 5.B.P.—W. A. Caldwell, 53 Hughes St., North Unley. Metres, 230. Transmits C.W. and telephony. 7 p.m. Sundays and 10.30 p.m. Thursdays.
- 5.C.B.—Newton McLaren Ltd., Box 266, G.P.O., Adelaide. Metres, 230. Transmits telephony and occasionally C.W. Friday night, 7.30—9 p.m.
- 5.D.O.—Frederick Berman Oldfield, St. Peter's College, Adelaide. Metres, 235. Transmits C.W., I.C.W., tonic train, and telephony. 11 o'clock onwards.
- 5.H.R.—H. Rhodes, Electrical Engineer, Power House, Kadina. Metres, 195. Transmits telephony. 9—10 p.m. nightly, and Sunday morning.

WESTERN AUSTRALIA.

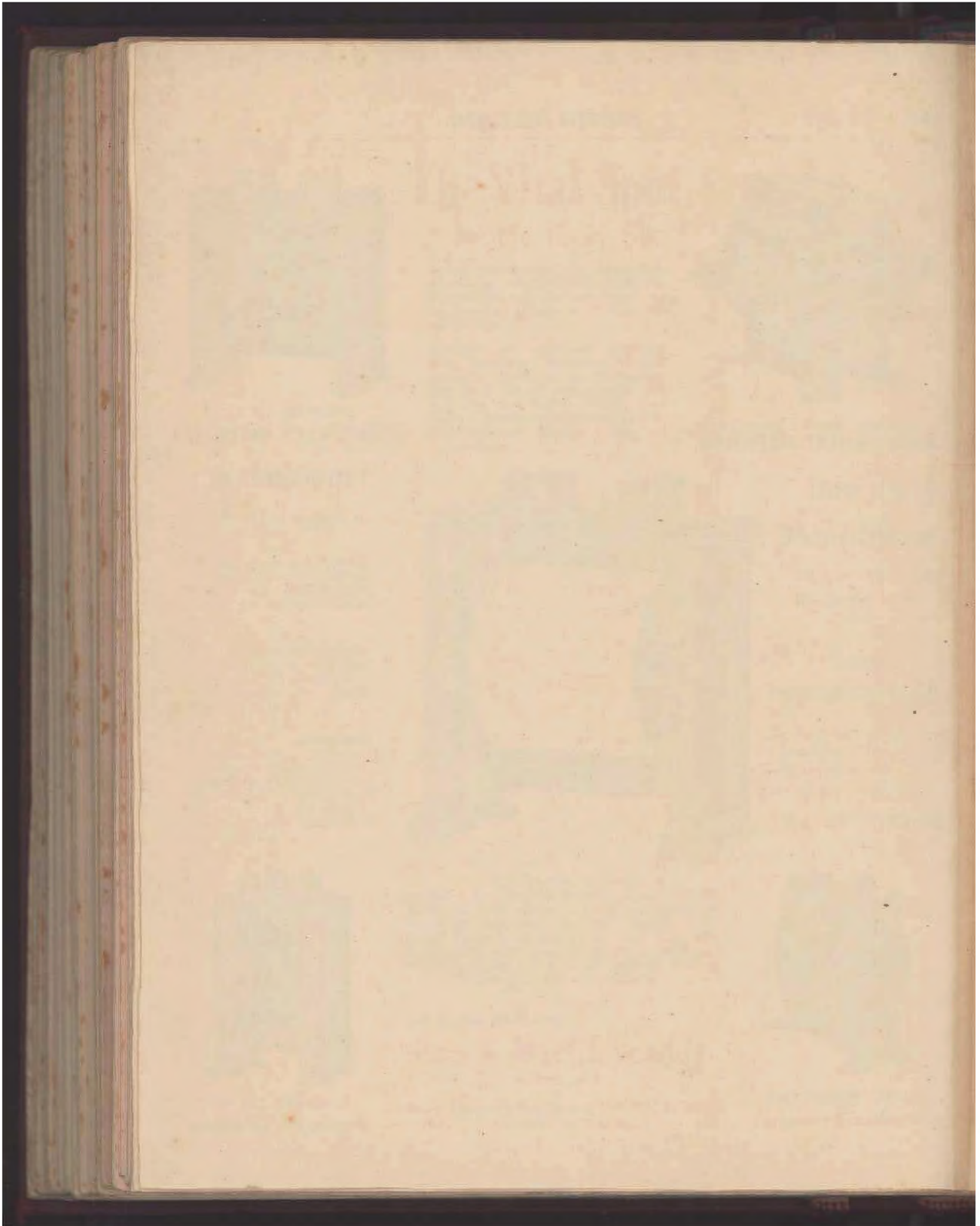
- 6.A.F.—Arthur Silby, 65 Third Avenue, Inglewood. Metres, 250. Transmits C.W., I.C.W., and telephony. 8 p.m. to 9.30 p.m.
- 6.D.Y.—Herbert Thomas, c/o Harris, Scarfe & Sandover, Hay St., Perth. Metres, 225. Transmits I.C.W. Thursday and Sunday evenings, 8 p.m.

TASMANIA.

- 7.B.A.—E. C. Sheldrick, 59 West Tamar Rd., Launceston (Tas.). Metres, 220. Transmits C.W., I.C.W., T.T., and 'phone. Uncertain.
- 7.B.N.—Messrs. Wills & Co. Pty. Ltd., 7 Quadrant, Launceston. Metres, 235. Transmits C.W. and telephony. Monday nights (telephony), 8 till 10, and C.W. after 10.

SOUTH AUSTRALIA.

- 5.A.C.—Victor Roy Percival Cook, 37 John's Rd., Prospect. Metres, 200. Transmits C.W., I.C.W., and telephony. Saturday night after 10 p.m.
- 5.A.D.—Alfred Raymond Snowwell, Harris St., Exeter. Metres, 250. Transmits C.W. and telephony. 7.30 p.m. until 1 p.m., Monday, Wednesday, and Friday.
- 5.A.E.—J. M. Honnor, Alpha Rd., Prospect. Metres, 240. Transmits C.W. and telephony. Sunday mornings and Tuesday evenings.



The Name to Know in Radio

Wiles' Wonderful Wireless and Electrical Stores

60-62 GOULBURN ST. (1 door from Pitt Street)
284 PITT ST. (Near Goulburn Street)
23 PITT STREET, NEAR CIRCULAR QUAY

SAME QUALITY.
SAME PRICES.
SAME SERVICE.

CONSERVE YOUR OWN RESERVANT RECEIVING SET. WE SUPPLY COMPLETE BUILDING INSTRUCTIONS AND ADVISE WITH EACH ORDER.

PARTS FOR 4 VALVE BROADCAST RECEIVING SET.
250 Miles Guaranteed Reception on Loud Speaker.

1. Bakelite Panel, 18 x 24 x 3/16	0 11 3
1. 200 Variable Condenser, with Variable	1 10 0
2. 50 ohm Rheostat	0 10 0
1. Battery Switch	0 5 0
8. S.P. Terminals	0 5 0
1. 45 Panel Plug	0 5 0
1. 45 Panel Plug	0 5 0
1. Extension Handle	0 5 0
1. 5000 Condenser and Grid Leak	0 10 0
3. Valve Holders	0 10 0
2. Jefferson "Star" Transformers	2 5 0
1. Single Circuit Jack	0 4 0
Maple Cabinet	1 10 0
GR 1 0	

ACCESSORIES

4. Standard H.C. Cuts, 150 to 2000 meters	1 10 0
2. UV-201A Valve	4 10 0
3. 2V.40 amp. Accumulator	3 0 0
2. 25-watt H. Harcove	1 5 0
Loud Speaker, and Head Phones, as selected, see price list	
21R 15 0	

Another Big Reduction Price of Valves.

RADIOTRONS—	
UV-200	NOW
UV-201A	30/-
UV-199	
WJ-12	25/-
WD-11	
A.P. (Double Element)	

Get new Price List, 25, immediately Yours for the asking. Rheostat and Bakelite Panelled free of cost when purchased with necessary Im. Assembly set.

THE GUARANTEED DIRECT STATE ABOVE IS IN A LOUD SPEAKER BY 85 HEADPHONES, OTHER STATES, NEW ZEALAND, U.S.A. CAN BE TUNED IN QUITE CLEARLY DISTINCTLY.

PARTS FOR 4 VALVE BROADCAST RECEIVING SET.
250 Miles Guaranteed Reception on Loud Speaker.

1. 14 x 2 x 3/16 in. Bakelite	21 5 0
1. 001 Variable Condenser, with Variable	1 10 0
1. 0005 Variable Condenser, with Variable	1 7 0
2. 42 Panel Plug	0 7 0
1. 45 Panel Plug	0 5 0
1. 44 Extension Handle	0 10 0
2. 50 ohm Rheostat	0 10 0
2. Battery Switch	0 5 0
8. S.P. Terminals	0 5 0
4. V.T. Holders	0 10 0
2. Jefferson Star Transformer	0 5 0
1. 2000 Fixed Condenser	0 5 0
1. Freshman Variable Leak	0 5 0
Panel Wire, Solder, etc.	0 3 0
1. Maple Cabinet	2 5 0
1. Single Circuit Jack	0 4 0
21R 1 0	

ACCESSORIES

4. Standard H.C. Cuts, 150 to 2000 meters	2 0 0
4. UV-201A Valve	1 5 0
1. 4 volt 40 amp. Accumulator	3 0 0
2. 25-watt "H" Harcove	1 0 0
Head Phones and Loud Speakers as selected, see Price List	
21R 13 0	

Our Guarantee

It is our intention that every article in this list shall be truthfully described. Therefore, guarantee everything you buy from us to be satisfactory to you in every detail. You take no risk whatever in sending us your order, for unless you are completely satisfied with the goods and your saving, you may send back everything you buy from us and we will promptly return your money and all transportation charges you have paid.

W. HARRY WILES

Radio and Electrical Supply, 60-62 Goulburn-st., Sydney

Please address all communications to Head Office, 60-62 Goulburn Street.

ESTAB 20 YEARS

(Continued from Page 31.)

Please note the following alteration and addition to the list of N.S.W. transmitters:

2.G.Q.—Edward Barlow, 268 Beardy St., Armidale. Metres, 180 to 200. Transmits C.W., tonic train, and telephony. Intermittently transmits between 6 p.m. and 7.45 p.m., and between 10 p.m. to 1 a.m.

2.Y.F.—P. P. Clark, 36 Lauderdale Avenue, Manly. Metres, 190. Transmits C.W. and tone. Every night after 10.

WIRELESS TRADERS' ASSOCIATION.

A meeting, which was called on Monday, September 29th for the purpose of discussing the formation of an Association for the protection of the interests of wireless traders was unfortunately very poorly attended on account of inclement weather conditions. A further meeting will be called on Monday, October 13th, which it is hoped will be productive of better results.

That there is need for such an association there can be no doubt, for there are many things under the present broadcasting regulations which urgently need revision and which it will not be possible to rectify without the concerted action of traders.

In any case, the Wireless Industry has reached such proportions and the number of traders has increased so rapidly that it is felt that, in order to properly safeguard and further their general interests, an independent organisation is essential. According to the convenors of the meeting, this arrangement would be more effective than the one now in force.

Mr. F. W. Larkins, publicity manager of Amalgamated Wireless A/sia. Ltd. has just undergone a serious operation for appendicitis at Glengarlen Private Hospital, Lytton St., North Sydney. Mr. Larkins had a very bad attack on Thursday afternoon of last week, and was operated upon early next morning. His many friends will be glad to learn that he is progressing favourably.

Tell Your Friends about

Wireless Weekly



ARTARMON RADIO CLUB.

At a special meeting of this club, on Tuesday, 23rd September, it was unanimously decided to hold an exhibition of crystal wireless sets, made by boys of this district under the age of 16 years.

There was a good attendance of members, and plenty of enthusiasm was shown by the way prizes were offered. The show will take place in the first week in November at the Scouts' Hall, Cleland Park, Artarmon.

This club has now been established about two years, and holds weekly meetings on Tuesday nights in the local Scouts' Hall.

Inquiries regarding this club are always welcome, and should be addressed to the Hon. Secretary, Mr. Myles Ariel, 22 Hampden Road, Artarmon. This address is right next door to the Club house.

WAVERLEY RADIO CLUB.

Waverley Radio Club held the first meeting in its new half-year on Tuesday, 23rd September, Mr. A. Burrows being in the chair. A circular, requesting amateur transmitters to cease sending between the hours of 8 and 10 p.m. was received from the Wireless Institute. It was moved and seconded that the Secretary, Mr. Howell, sign this for the club.

The new cage aerial was reported erected; and it was decided then, after discussion, that the club instal a low power telephony set, pending the completion of the larger one. Suggestions for this would be submitted at the following meeting. In the meantime the committee would prepare a syllabus for the forthcoming month. Mr. Bowman then gave an interesting talk on accumulators.

FOR SALE.—S.T. 100 Star Experiment, include A and B batteries, valves, phones, or L.S. Portable in case 15in. x 8in. x 8in. Any Wednesday evening. E. D. Huckell, "Ormonde," Unwin's Bridge Road, Undercliffe.



Members of Leichhardt and District Radio Society.



Instruments constructed and used by members of Leichhardt and District Radio Society.

INTERSTATE NOTES

VICTORIA

THE Council proposes to start grading its members into (a) experimenters, (b) students, (c) broadcast listeners. This has been threatened for some time and the Educational Committee now has in hand the drafting of a set of questions. As usual with the Council this proposition has not been submitted to the various sections for discussion and suggestions, it being understood, of course, that all the accumulated wisdom of the movement is in the Council. It would be different if these matters were debated beforehand in the sections and delegates did not so much depend on their own inner consciousness in dealing with such matters. The Council would be well advised to beware of degenerating into cliques.

The null results of the Institute's various interviews with the P.M.G.'s Department should be a warning to members who are content to leave everything to the Council. What is wanted in these matters is the weight of numbers. A few hundred or even a few score of persons looking determined carry more conviction to the head of a department than one or two looking very wise and amiable. The intolerable present position of would-be experimenters is entirely due to the insufficiency of the Institute officials who allowed themselves to be hoodwinked by the authorities. Other interests can gain concessions, but the Institute gains only promises and compliments.

With a lot of stage thunder the Institute's official organ vehemently protested against the conceding of re-action under the new regulations. It has since published several circuits employing the condemned contrivance, but has not done anything towards mitigating the nuisance by a vigorous campaign of education in the public press by leaflets among the dealers. What the Institute should do is to make more use of the sections and less of the officials. There is no mistaking that the officials are a set of very fine fellows, but that is no reason for working them to death, and letting the sections languish in indolent ignorance.

The Institute has recently and at length decided to purchase various instruments out of the

profits of the wireless exhibition. The first will be a wave meter, which it is gratifying at least to know is to be an English one, but why is it not to be made in Australia? On enquiry, it was asserted that it could be made quite as well out here, but not calibrated, but one wonders what ex-Professor Lyle and Professor Laby would say to that extraordinary assertion. There is apparatus at the Melbourne University and no doubt at Sydney also which is quite capable of calibrating a wavemeter to any desired degree of accuracy, but the same craze for using imported stuff that begins wireless with oregon for masts prompts the young men on the Council to ignore what their fathers have done for them in making Australia self-contained in other directions also. The young men naturally prefer other people's homes to their own, and run after other people's daughters and wave meters and so forth, regardless of what is nearer at hand.

Press Blunders.

The daily press, like men's unbelief in the old hymn, "is prone to err," but one expects the writers of wireless notes in their columns to attain a higher standard than three errors in simple matters per issue, which was the record perpetrated recently in a Melbourne newspaper. In endeavouring to enlighten a correspondent as to "howling" and its prevention, it was first of all asserted that "howling" and "re-radiation" are the same thing, and secondly that it can be mitigated or prevented by using the re-action coil as small as possible. Both these statements are deplorably wrong. The third was not quite so wrong, but it was debatable, as it alleged that tapped transformers for the high frequency circuit were unobtainable in Melbourne and that they were preferable to a range of separate coils. If dead-end effects count for anything they must count up to their maximum in high frequency appliances. There is, however, now obtainable in Melbourne a tapped H.F. transformer with the switch wired in such a way as to short-circuit the idle windings and it promises to give good results.

(Continued on page 38)

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SWITCH CONTACTS, N.P.,
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PARTS SINGLE SLIDE SET,
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1½in. Moulded Knob	9d.

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SYDNEY.

Current Events and Short Circuits round the Wireless World.

3AR, while still transmitting from A'Beckett St., has removed its offices to 44a Elizabeth Street.

3UZ did some fine broadcasting during the Melbourne Show.

The two Conservatoriums under Mr. Sutton Crow and Mr. Fritz Hart, contributed largely to the success of broadcasting week at the Show. Mr. Sutton Crow is an old campaigner in broadcasting, as he was vastly interested in a pioneer display at broadcasting from the Conservatorium itself a year or so ago.

Why should not the University become a "B" station? Both technical and artistic talent are there associated.

Buckley and Nunn have been appointed agents for Broadcasters Ltd., and will show wireless goods among the latest spring fashions.

They say that Braybrook will broadcast for the first time on October 8th. Listen in on 1720 metres. Buy honeycomb coils before the rise!

Culliver (3DP) the pioneer in wireless telephony in Melbourne, is now associated with Chandler's, who handle Eisemann products, and had a good stand at Melbourne Show. A feature of their sets is the aluminium panel, superseding ebonite, the insulating material being incorporated in the components.

3BQ, the u Bi Quitous Max Toarden, was in Tasmania when Bell, of New Zealand, rang into California's two-way traffic. Otherwise it would B Qrious to speculate whether Max might not have obtained Max. results. It's up to you, BQ, as the A.R.R.L. would say.

An epidemic of tall masts is spreading over Melbourne and suburbs. Cox tickles the clouds with an 80 footer, while the mast of Masters overmasters even that and reaches out for Heavyside Layer. The timber merchants have discovered that wireless offers an outlet for scaffolding poles and some of them are stocking weird saplings whose mothers must have studied the sine wave before they were born, so nicely undulated is their slim outline. Water pipe is another very appropriate material for a mast and that, too, is occasionally seen decorating the atmosphere around a wireless home.

Wireless at Melbourne Show.

The chaos that reigns in the ether around Melbourne at the present time naturally extended to the wireless exhibits at the Show. Anyone inter-

ested in wireless had many metres to walk in traversing the distances between the various firms represented. Those seen were Messrs. Corlett, Derham & Co., Norris and Skelley, Associated Radio, Chandler's, Broadcast Supplies, Amalgamated Wireless, and New System Telephones. Those not seen, if there, were not missed through lack of searching, and it really does seem as if the time is ripe for a more united front to be presented to the public by wireless exhibitors at shows and demonstrations. One expected something more systematic at the 1924 show. Of course it is well to be scattered over the grounds in order to minimise interference, but a central exhibit in a main hall was due to the awakening public. The absence of an official wireless bureau conducted by the P. M.G. is much to be regretted. The Wireless Institute also missed a fine chance to distinguish itself, although some prominence of a meagre sort was attained by its association with the New Settlers' League. This energetic body had a tent in a fairly good position which was occupied by such extremes in exhibits as a wireless set of the latest design, flanked by makeshift household articles made from kerosene tins, but all united in the common service of the settler outback. The League went to no end of trouble to boom wireless for the new settler, but from conversations overheard, it is doubtful whether the home that makes cupboards out of kerosene boxes will find money to spare for a wireless set at present prices. Also there was a dearth of practical information for anyone but the prosperous farmer. The average Melbourne firm is not anxious to do business with the small buyer, preferring to sell a few £100 sets to many at £20. Special programmes were put on during Show Week at the request of the New Settlers' League by 3AR (Associated Radio) and also by 3UZ (Messrs. O. J. Nilsen & CO.). Various lectures from the Agricultural Department vied with University Conservatorium students to interest audiences that in the N.S.L. tent at any rate were not as large as the campaign deserved. One would have liked to see exhibited a complete set, aerial and all, of a type suited to modest outback requirements. From enquiries made at the Show, after eliminating superfluities, it ought to be possible for a New Settlers' Set to be devised for about £20, batteries, phones, and all, and one would like to see the Wireless Institute moving in this direction.

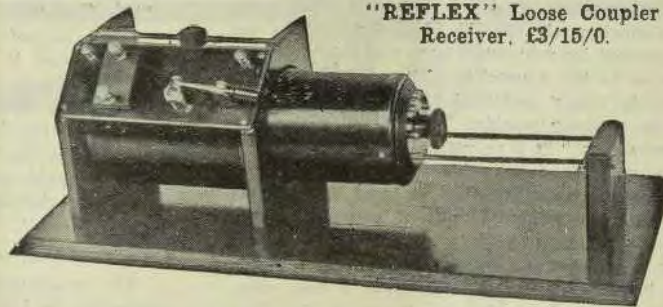
(Continued on Page 40)

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2000 Ohms.

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"REFLEX" Loose Coupler
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MARCONI, R	19/-
MULLARD	19/-
DE FOREST RADIOTRON	35/-

HEADPHONES OF HIGH QUALITY THAT WE STOCK.

PEERLESS, 2000 ohm	32/6
TRIMM, 2000 ohm	32/6
TRIMM, 3000 ohm	45/-
RED SEAL—the Aristocrat of all Head- phones	50/-



WE HAVE ALL OTHER BRANDS.

SEND FOR OUR PRICE LIST.

RADIO HOUSE, 619 GEORGE STREET, SYDNEY

THE QUALITY RADIO STORE.

(Continued from Page 38)

The reception at the show was distinctly so-so. Unfortunately the N.S.L. tent, where the set was operated by volunteers from the Institute, was next door to the Australian General Electric Co's. fine kiosk, which provided occasional interference from its washing machine motors and violet ray demonstrations. It is regrettable that 3AR's transmission was occasionally blamed instead of these more local causes. In other parts of the grounds much better reception was noticed, and particularly at Messrs. Broadcast Supplies, where a 4 valve cabinet in a secluded and restricted corner of a motor kiosk, but drawing inspiration from a fine wireless mast erected by Messrs. Love & Co., discoursed real music of the sort that would soon make wireless famous if more general. A glance round at the allied firms that supply accumulators revealed one valuable novelty at the stall of Messrs. Sutherland, who were showing in an inconspicuous corner a fine little 2-volt cell of 20 amp. hour capacity that deserved to be more prominent, as a pair of them would be just right for 6 months' service on a set using dull emitters.

The impressions left on a wireless specialist by Show Week are that the various firms need to co-operate more; that broadcasting is still woefully crude and intermittent; that prices are too high for the Australian public; that the Wireless Institute speaks with too many voices to be a good advisory body for mere broadcast listeners; and that next Show it behoves the authorities, experimenters and commercial firms to stage something far more extensive and informative than they had to show for themselves in 1924.

SOUTH AUSTRALIA.

LISTENERS-IN in South Australia are still anxiously awaiting the arrival of the long overdue and much promised 500 watt transmitter which is to be installed by the S.A. Broadcasting Company at their station at the Grosvenor.

5AB still uses the 100 watt transmitter which was installed some time ago; their music is now coming in much stronger than previously, but the modulation leaves much to be desired, many good items being utterly spoilt by the terrible echo which accompanies the transmissions.

Ever heard of draping the walls of a broadcasting studio A.B.? Try it, it will improve your transmission wonderfully; also don't waste so much time between your items; listen to 2FC and take a leaf out of their book. If you want the

general public to subscribe to broadcasting you must give them the very best possible, so buck up and let's hear something good from you.

It is in your hands to make things boom as radio is bound to boom when there is something really worth listening to.

A New Spark Station.

A new station has recently been heard in Adelaide transmitting time signals around about 9.30 p.m.; the signals are transmitted by hand, the code used being evidently one that is known only to the operator himself.

A Concert from 5DN.

The transmissions of station 5 Don N are still gladdening the hearts of the listeners in here, their items transmitted every Tuesday, Thursday and Saturday being quite up to standard. On Thursday last a concert arranged by Mrs. Hume was broadcasted from this station. The first half of the programme was taken up by a lecture on "The League of Thought," by Professor Coleman Phillipson, of the Adelaide University. After the interval an enjoyable programme was contributed by local artists.

The following was the programme arranged by Mrs. Hume: violin solos, by Miss I. Foulds, slow movement of Mendelssohn's Concerto, Beethoven's "Romance and Souvenir," songs by Mrs. Leslie Todd, "Annie Laurie," "I Know a Lovely Garden," "My Message"; baritone solos by Mr. Fred Williamson, "I Heard you Singing," "I Hear you Calling," and "My Dreams"; recitations by Mr. Steven Dunks, "Peg Away" and "Mine Family"; and by Miss Gwen Hone, "Comfort," and "The Carrying of the Baby." The accompaniments were rendered by Mr. George Griffiths.

Messrs. E. J. Hume and L. C. Jones Leaving for Melbourne.

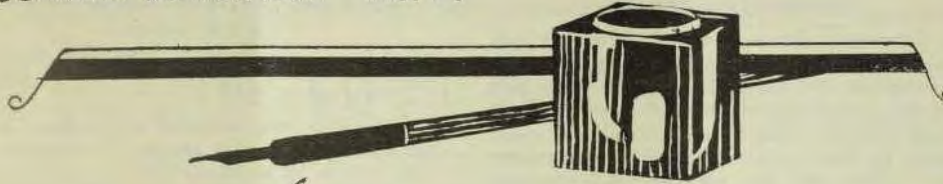
Mr. E. J. Hume accompanied by Mr. L. C. Jones are leaving for Melbourne shortly where they hope to interview the Federal authorities in reference to their application for a "B" class broadcasting license for station 5DN. On the conclusion of their business in Melbourne, they will proceed to Sydney, where Mr. Hume hopes to meet the steamer from America transporting the new generator which Mr. Hume hopes to bring back to Adelaide by rail.

Conservatorium Concerts and Extension Lectures to be Broadcasted.

Arrangements are being made for the broadcasting of the Conservatorium concerts and Univer-

(Continued on Page 42)

CULLEN JOTTINGS — No. 2.



Print it boy

Competition Results !

The result of our Slogan Competition is announced in the Editorial Section of this magazine.

To the remarks contained therein, we would add that the response has been exceedingly gratifying. The volume of replies entailed a great amount of work in properly assessing the worth of each slogan suggested, and it was only after long consideration that the Editor of "Wireless Weekly" and myself at length reached our decision.

I should like to take the opportunity here of
thanking all entrants _____ !

NEW ONE VALVE SET ON EXHIBITION

An entirely new composition of a 1 Valve Reflex Set has been purchased by me and is being shown in our Bathurst Street window. This novel set is well worth everybody's inspection, and will prove of great interest.

You have my word for it!

E.R. Cullen

96, Bathurst Street

Phone: City 896 and 2596



(Continued from Page 40)

sity Extension Lectures from 5DN. A special committee of University authorities, including Professor Chapman and Dr. Harold Davies (who have both been heard from this station) has been appointed to deal with the matter, and Mr. Hume has offered to place his station entirely at the University's disposal. This offer has been gratefully accepted by the University Council and the land line over which the speech and music is to be carried from the University to Mr. Hume's station is already being laid. It will naturally be some time before all the necessary arrangements are complete, but it is expected that the 'Varsity will be heard on the ether some time before Christmas.

A Radio Factory Opened.

Messrs. Paroso Ltd., have completed the organisation of their new factory at Hindmarsh, which has now been officially opened. They hope to manufacture everything appertaining to radio sets—except valves. This should be good news to all connected with radio, as at the present time wireless gear is very hard to obtain, stocks are very low, and each new shipment is sold out almost immediately it arrives.

It would be very interesting to know how many licenses have been issued since the adoption of the open set policy, as a tremendous amount of radio gear has been sold and much more could be sold if the gear was available.

A Wireless Concert.

At the sweet pea exhibition held in the Adelaide Town Hall recently, under the auspices of the Carnation, Dahlia, and Sweet Pea Society, a programme of musical items was given by the S.A. Broadcasting and Radio Company. Orchestral music was provided by the Rosemont Orchestra under the conductorship of Mr. Stanley Laurie and assisted by Mr. Allen Sierpe, A.L.C.M., violinist.

Radio Concert from 5DA.

A fine concert was given this evening (Sunday) from 5DA, the experimental station of Mr. S. R. Buckerfield, of Regent Street, Parkside. A number of orchestral and instrumental items were rendered by local artists, including a trombone solo by Mr. Stan Brown, a violin solo by Miss Grace Pyne, a cornet solo by Mr. Frank Murphy, accompanied by Mr. Smith, the accompanist for the other items being Mrs. Gibson. The modulation was perfectly clear, each item being thoroughly enjoyed by all who listened in.

WIRELESS INSTITUTE OF AUSTRALIA.

N.S.W. Division

Box 3120 G.P.O.,

SYDNEY,

18/9/24.

We have been informed by the Radio Inspector that a considerable number of complaints have been lodged by broadcast listeners having concert programmes interfered with by experimental transmitters.

Unless something is done by the experimenters themselves to overcome this difficulty, it's a foregone conclusion that compulsory silent hours will be introduced by the Department.

The matter has been discussed by the Wireless Institute, and it is thought that if experimenters would refrain from transmitting both telephony and L.C.W. between the hours of 8 and 10 p.m. (it would then not be necessary to introduce compulsory silent hours.

In the case of a C.W. transmitter operating on a wave length that does not cause interference from hum or key clicks, it should not be necessary to observe silent periods. If, however, complaints are lodged against such a transmitter, then the owner should either rectify the cause of the interference (being hum or key clicks) otherwise refrain from transmitting during the hours mentioned.

The Wireless Institute would like you to inform them as early as possible if you are willing to adhere to this rule.

Bear in mind that unless something is done in the matter voluntarily, compulsory action will undoubtedly be taken by the authorities, which will debar even those transmitters who cause no interference.

PHIL RENSHAW,

Hon. Secretary.

To the Secretary,

Wireless Institute of Australia,

N.S.W. Division (Box 3210, G.P.O., Sydney)

I, hereby agree to co-operate with the Wireless Institute of Australia, N.S.W. Division, in the movement to voluntarily close down my station within the specified limits during the period 8 o'clock to 10 o'clock every evening.

(Signed)

Date

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COMPLETE Set of Parts for 1 Valve Amplifier	£5/-/-
2 VALVE SETS, ready to assemble without Valves and Batteries)	£9/9/-
HEADSETS, from	£1/5/-
LOUD SPEAKERS, from	£4
Wiring Diagram, and Panels Drilled	FREE

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*The Weco valve stands in a class by itself
It is entirely free from Microphonic Noises*

The world renowned oxide coated filament as used in the manufacture of the most expensive Western Electric valves is also employed in the construction of the Weco valve thereby ensuring a phenomenally long life and an efficiency equal to the very best of high temperature valves.

It is essentially an all-purpose valve and can be used

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Suitable sockets to mount Weco valves are available, or adapters can be supplied which enables you to fit them to any standard British socket.

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CLEAR, MUSICAL and ECONOMICAL.

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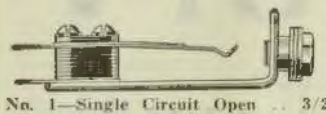
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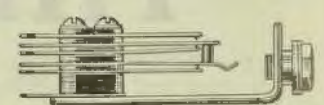


No. 4—Single Filament Control, 4/9

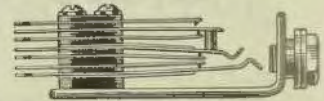


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No. 5—Double Filament Control, 5/-



No. 6—Detector Jack .. 6/-
(For Neutrodyne Receivers)



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No. 8—First Audio Jack .. 5/8
(For Neutrodyne Receivers)



No. 9—Seven Spring Automatic Jack
6/-



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MULLARD LOW FREQUENCY VALVES 17/6 each

MULLARD HIGH FREQUENCY VALVES, 17/6 each

BRANDES HEADPHONES 40/-

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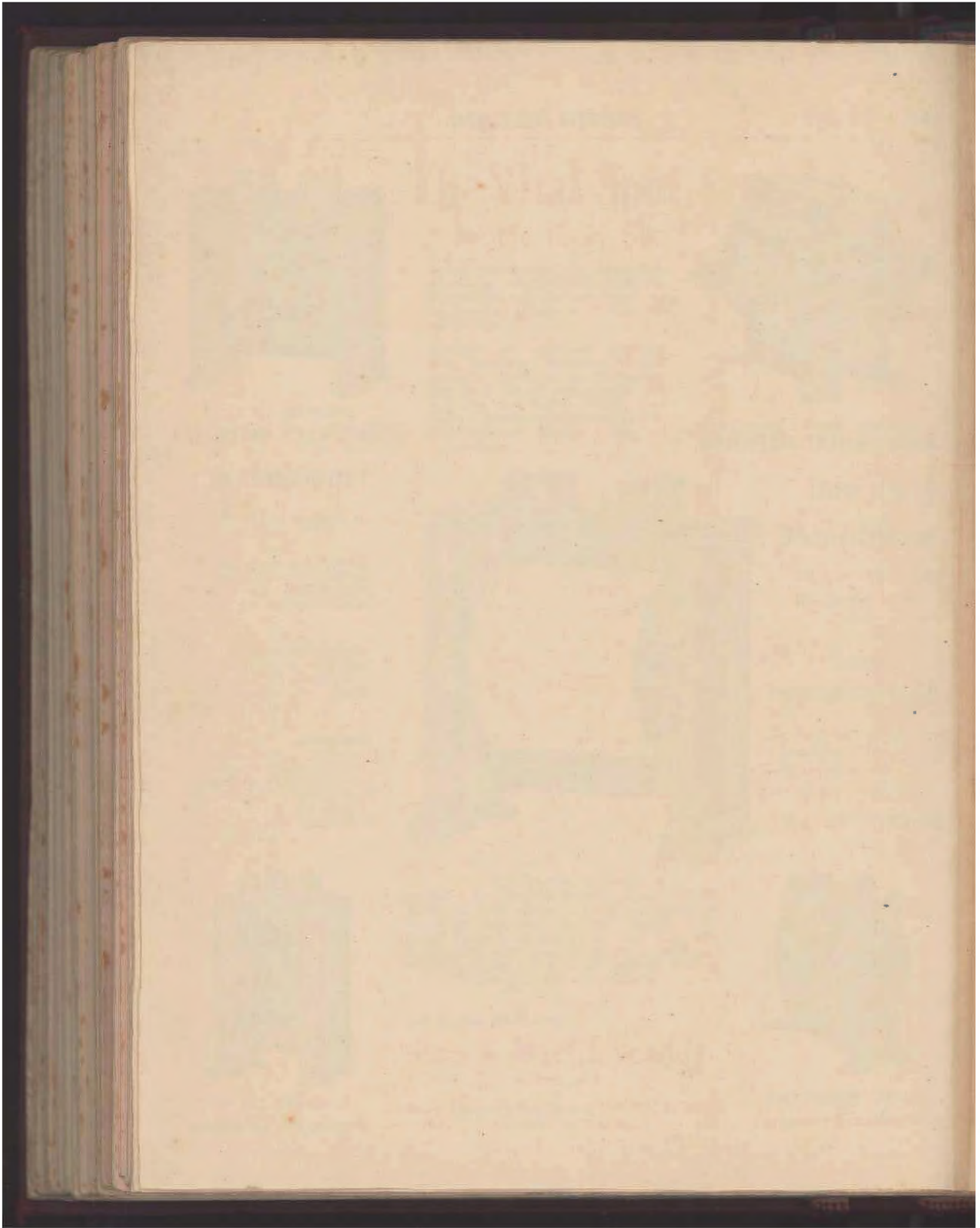
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Page Fifty WIRELESS WEEKLY Friday, October 10, 1934

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TRIMM HEADPHONES

TRIMM HEADPHONES ARE DEPENDABLE PRICE 32/6 PER PAIR
TRIMM HEADPHONES MAKE HEARING EASY.

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Ratio
 3 to 1
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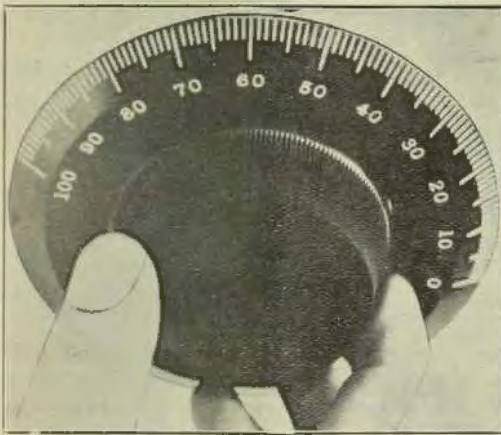
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R200—4in. dials, fits 3/16in. or 1/4in. shaft.

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See how quickly you can turn to any degree or fraction of a degree.
Really does away with a Vernier.
A generous knob, easy to grip.
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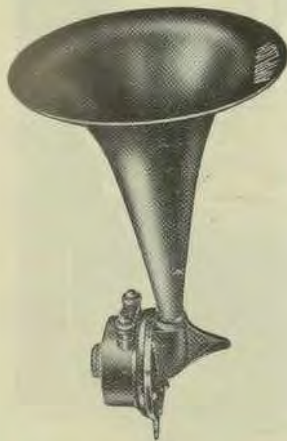
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Contact Studs, N.P., per doz.	1/-	Aerial Wire, Copperweld	100ft., 4/-
Runner Rods, nickelled	1/2	Primary Tubes Wound	3/6
Sliding Contacts, brass	1/6	Secondary Tubes, Wound and Tapped	6/-
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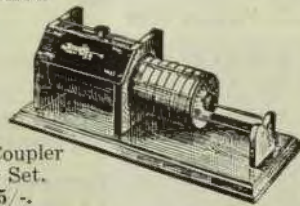
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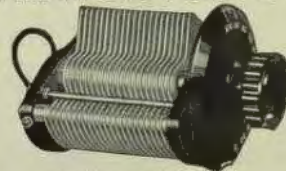
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The Diaphragm for Distance

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