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Federal Government Will Make Huge Profits at Public's Expense

IS IT BECAUSE THE FEDERAL GOVERNMENT WILL GET 51 PER CENT. OF THE PROFITS FROM AMALGAMATED WIRELESS (Aust.) LTD. THAT THEY ARE TAKING NO ACTION IN THE MATTER OF LICENSE No. 17?

If you wish to become a listener-in to Broadcasting, you must first pay the Federal Government 10/-. Then before you buy a set you must pay 12/- or 17/6 (British and American) royalty for each valve in your set, to Messrs. Amalgamated Wireless (Aust.) Ltd., 51 per cent. of whose profits go to the Federal Government. Then there will be further royalties to the Broadcasting Station, irrespective of the fact that they may be giving a free service; they will also have to pay a royalty to Amalgamated Wireless (Aust.) Ltd.

The Country Man will need a 4 valve set to receive Broadcasting continuously and well, but before the dealer sells him a set he will have to add from £3/10/- to £4/10/- to the price as royalties and licence.

A Crystal Set can be made for less than 20/-, but Licences and Royalties of at least another 50/- will have to be paid before the set can be used for listening to Broadcasting.

The Government will collect 10/- of it for License and the other 50/- which will go to the Amalgamated Wireless (Aust.) Ltd. Presuming that it is profit, 50/- of it will be handed to the Government making it all 15/- that the Federal Government will collect on a set that costs less than 50/-.

AND IT HAS BEEN SAID THAT THE FEDERAL GOVERNMENT WAS GOING TO DEVELOPE WIRELESS IN AUSTRALIA.

Roster for Week ending 24th October, 1923

Transmitters are requested to ring Redfern 732 (during day) and North 226 (at night) to book Roster Times, or cal 2 H.P. (330) by Radio Phone return 7 p.m. and 7:30 p.m. daily.

The figures shown beside call sign denote wave length.
Combined High and Low Frequency Amplifier
For Adding to a Crystal Receiver

This instrument has been specially designed to meet the requirements of the listener, who has become accustomed to the operation of the crystal receiver, and is desirous of experimenting with valve apparatus. The design given is so arranged that it does not become necessary to scrap the crystal set, which is made use of in its entirety.

When the need is felt for an amplifier to be added to a crystal receiver, one is sometimes in doubt as to whether to adopt high or low frequency amplification. In considering the merits of such system it is obvious that while high frequency amplification will extend the range of reception and low frequency will only render somewhat stronger, signals already audible, that a combination of both high and low frequency amplification is necessary to give good reception under varying circumstances.

The crystal detector is well known to give better results than a detector valve, whilst the tendency of the high frequency amplifier to be introduced, to self-oscillate, compensates for the absence of any direct reaction coupling.

Thus, the arrangement under description is equal to any three-valve receiver, whilst no alteration is necessary to the tuning circuit of the crystal set.

The principle of the instrument embodies the introduction of a tuned aerial circuit comprising fixed condenser and variable. A valve is arranged as a high frequency amplifier connected on the tuned mode principle, and makes use of the variometer, or tapped or sliding contact inductance, of the crystal set. The crystal still functions as the rectifier followed by a note magnifier connected up through a low frequency transformer. No attempt is made to feed back for the purpose of producing dual amplification, as it is well known that there is no arrangement capable of easy manipulations in which improvement is obtained in signal strength on wave lengths below 460 metres.

An ordinary panel 3 1/2 in. in thickness is employed to carry the component apparatus and measures 6 1/4 in. by 2 1/4 in. A variometer for aerial tuning is arranged in the centre lower half of the panel, and on either side are the variable filament resistances. Between the valve holders, which are above the resistances, is an inter-valve transformer. The latter must be of the highest grade practicable, and it should be unerringly when purchasing that its windings consist of no
Wireless Weekly

October 19, 1925.

A Variometer Loose Coupler.

An article describing a simple but extremely useful piece of apparatus.

Two cardboard tubes A and B, each 2 in. long and 1 in. and 2½ in. in diameter respectively, are provided at one end with wooden discs B and E secured to the handles with a little glue or by means of small nails.

A hole is drilled through the centre of the larger disc E to accommodate the end of a 3/16 in. round brass rod G which is firmly clamped to same by means of two nuts.

The small disc D is attached to an upright support A, 2½ in. by 4 in. and about ½ in. in thickness. A piece of ½ in. square wood H, 3 in. long, is drilled through at ½ in. from the top and bushed with a 1 in. length of brass tubing F large enough in internal diameter to slide somewhat over the rod. This is made a "friction fit" in the wooden support and if necessary it may be secured with a little tissue paper.
The Management of Crystal Receivers.

HOW TO INCREASE SIGNAL STRENGTH.

By J. DECOMBE.

In a valve set the strength of the received signals can be controlled by increasing the number of valve amplifiers in use. If a single valve will give a tolerably clear note in the head-phones, the addition of one or more valve amplifiers is almost sufficient to increase the volume of sound up to the point of operating a loud-speaker.

With a crystal set, on the other hand, no amplification is possible. The intensity of sound in the telephone is strictly limited by the actual amount of energy picked up by the receiving aerial. In these circumstances it is obviously important to make the best possible use of whatever energy is available, and to see that none of it is wasted unnecessarily.

In the first place the aerial circuit should be accurately tuned to the signal wave-length. Where a wide range tapped inductance coil is used in combination with a variable condenser, care should be taken to short circuit, or, if possible, disconnect the unused end of the coil so as to avoid 'dead-end' effect.

For a given wave length the maximum signal strength is obtained when the condenser reading is small. For instance if the signals are first picked up on inductance grid No. 3 with the condenser reading about 150 degrees the switch handle should be moved over grid No. 6 and the condenser reading brought down to a corresponding lower value, say, 29 degrees or 30 degrees, which can always be done if the inductance coil has a sufficient number of tappings. The reason for this procedure lies in the fact that a crystal is a voltage operated device. Maximum voltage is thrown across the crystal when the aerial circuit contains a large value of inductance shunted by a small value of condenser. When the aerial circuit is then operating with optimum efficiency and signal intensity is at its best.

The variable type of winding
Experimenters!

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SYDNEY
(without counter) is undoubtedly the simplest and most efficient tuner for broadcast reception. The exception, "tuning capacity," is a case provided by the mutual electrostatic action between adjacent windings on the coiled and comparatively small in value. The broadcast programme is in most cases the chief item of interest, and although the tuning is "by-hand," signals will be received with maximum clearness on this type of coil when the latter has just the right amount of inductance and capacity —as more and no loss—combined with the minimum of ohmic resistance. Therefore it is advisable to wind a special "fixed" coil simply for use with whatever particular broadcast station is within range. This, of course means that a separate rotary or variable coil must be used when it is desired to pick up other signals, such as ship's Morse or amateur telephone, but it is a simple matter to substitute one tuner for the other when necessary.

With a standard outside aerial 100 feet in length, the London Station, 2LO, will be received with maximum strength on a "fixed" tuner of this kind, even when the aerial is as small as a thin wire wound around a 40 to 44 turns of No. 24 D.C.U. wire, starting from an inner diameter of 1 1/4 inches. With such a "tuner" there is no superfluous wire in the aerial circuit to add unnecessary resistance, and there is no necessity for any adjustment. It is impossible to specify the exact number of windings required, owing to minor variations in different aerials even when of standard length. It will, however, be found to be very near forty turns. The exact adjustment is easily found by adding subsequent turns one at a time.

Another source of energy less lies in crystal itself. It is often difficult to know when one has found the most sensitive available spot. If signals are coming through with reasonable strength, one often hesitates to disturb the "tunewhisker," fear of "burning out" the crystal or "pulling" it for a "shower." For this reason it is a good plan, particularly with Hartley and similar "soft" crystals, to use a small bundle of very fine wires in place of the usual single "tunewhisker". Not only is it easier to strike a sensitive spot with this arrangement, but in most cases it will be found that several of the wires are each feeding separate sensitive spots and are therefore acting in parallel to pass a greater supply of current through to the phone.

With Hartley a very light contact should be aimed at. In fact very good results can be secured by using a small slice of copper foil resting lightly on the side of the crystal instead of the ordinary wire "tunewhisker."

It is also advisable to wrap the crystal tightly round with tin foil and to pack it firmly in the cup in this fashion. The foiling or caging usually provided are frequently insufficient to provide a large surface of contact between the crystal and the cup, and this is essential if the crystal is to rectify with maximum efficiency. Alternatively the crystal may be permanently fixed in the cup by means of Wood's metal. This, however, prevents the crystal from being turned around from time to time in order to expose fresh surfaces to the "tunewhisker" and from this point of view is not so convenient as the former arrangement.

Next there is the aerial itself. The high potential end should be carefully insulated from the most solid support. It is found that a convenient tree is used in place of a specially neatly pule pole. This is so particular care should be taken to see that the aerial wire does not make contact, beyond the insulators, with any overhanging branches or leaves. Such contact would be quite sufficient, especially during wet weather, to "earth" most, if not all, of the high frequency currents through the wrong end of the aerial, so that practically nothing passes through the crystal and the phone.

There is very little advantage in using a double aerial, unless the available space is restricted. The difference between the signal strength obtainable on a crystal set with a double aerial 80 feet long is in practice about the same as that picked up with a single wire 100 feet in length. Where the full 100 feet stretch is available, a double aerial is only justified when the receiving station is near the high aerial mast.

Finally, the "earth" is a frequent source of trouble. Wires from the aerial mast are not to be toy connected. The joints between adjacent lengths of wires are usually made with red lead which has a high resistance. Connecting the earth lead to the aerial masts by means of ordinary wires and lead, but the best method is to use an outside "earth." Quite apart from forming a more efficient aerial circuit, there is the added security that, in case of the aerial being struck by lightning, an earthy lead will give a discharge path where an damage can occur.

The simplest and simplest outside earth plate is made from a piece of old wire netting. Ten or fifteen feet of this is rolled up into a mass roughly two feet square and buried about a foot deep in moist earth. If the only ground available is inclined to be poor, an occasional bucket of water will lessen matters. Poor iron spikes should be driven into the ground at each corner of the hole containing the aerial, and these should be joined together and to the wire netting by copper wire.

The current in the wire netting is transmitted to one of the corner spikes by means of the signal currents through the "earth." All the spikes of this kind can always be depended upon to give excellent results.

The amateur who constructs his own apparatus is often at a loss for a method of suitably identifying the various terminals and other items on the face of the panel. In the majority of cases where the apparatus has been constructed in a neat and workmanlike manner, the owner is unwilling to try his hand at engraving in fear of spoiling the appearance of his instrument.

When it is remembered that many a receiving set is valued in hours and hours of patient labour, this reluctance is understandable. Of course, the lettering can be marked on by a jeweller or other skilled workman, but this is, in noisy cases, an expense that cannot be undertaken.

With a little practice and given some patience it will usually be possible to ensure the appearance of any amateur who is able to construct his own set to engrave...
THE WORLD'S OLDEST WIRELESS MESSAGE

The happy wish to him across the sea.

The wireless weekly: the hundred per cent Australian radio journal

A RADIO WEDDING.

The authorities at the station WOR, Newark, N.J., are eagerly awaiting word from radiograms in the Hawaiian Islands and France. Per recently a wedding ceremony was broadcasted from this station, when Colonel King Stanley, a former Indian Scout, was united to Miss Grace A. Raymond. The bridegroom was seventy years of age, whilst the bride was forty-five.

BOOKS ON WIRELESS

Experimental Wireless Construction.—By A. Morgan. Price, £2 5s. posted.


Lessons in Wireless Telegraphy.—By A. Morgan. Price, 2/6 post. ed.


N.S.W. Bookstall Co. Ltd

26 George Street, Sydney.
An Exceptional Single Non-Regenerative Tube Set.

This is essentially a homemade set, any novice should have no trouble in making it. It is designed solely for broadcast reception.

The remarkable results obtained with this single circuit tuner are largely due to restricting the wavelength range to the broadcast band through the use of a specially constructed inductance coil designed to minimize losses. The circuit is the conventional one shown in Fig. 1, employing a fixed inductance and a variable condenser in series with the antenna, the coil being connected to the ground. The voltage across the grid detector is a voltage operated device and will therefore give better signals the greater the signal voltage applied to the grid.

It is preferable to take the voltage from the coil terminals rather than from the condenser. For in the resonance condition of the circuit the high frequency voltage across the inductance is equal to the combined voltages across the series condenser and the antenna capacity. Maximum voltage is thus obtained across the coil rather than across either of the capacitors.

The actual proportioning of the condenser and inductance values was based on practical experimental results obtained on a number of average broadcast antennas working on the broadcasting wave lengths. These antennas ranged between 75 and 100 ft. long, about 30 ft. high, all of them being single-wire antennas. It will thus be seen that the receiver is essentially a broadcast receiver. The constructional details of the receiver parts follow.

The inductance coil is fixed in value and has 45 turns of No. 28 enameled wire wound on a 3 in. fiber tube, having a 1/16 in. wall. The coil is wound in a single layer and the ends held in position by drawing the wire through two small holes. No. 32 drill will do, drilled at each side of the winding as shown in Fig. 2. The wire should be held in place by the use of a thin layer of shellac. The ends of the coil winding are thoroughly scraped and tinned and then soldered to the posts A and B in Fig. 2. One of

HONEYCOMB COIL STANDS

A SPECIALLY CUT PRICE

These stands take one, two or three coils and are the most popular method of holding honeycomb Duo-lateral and basket type coils. Can be used for either single, double or triple circuits. Beautifully finished in ebonite with brass parts nickel plated.

Catalog Price 35s. Special Price for Short Period 19s. 6d.

Send 2d. for Catalog
The telephone binding posts are on the front panel. A sub-panel, made of 1/8 in. black fibre, is in accordance with the specifications shown in Fig. 7, was fitted into a round cut in the back of the cabinet and binding posts for inter- 
na, ground, A and B batteries mounted on it. All connections, excluding telephone, were therefore made in the back of the set.

All binding posts are the so-called "Head-End" binding posts, that is, initiated to facilitate connections, as made by the Marshall-Hermon Co. Fig. 8 shows the rear of the cabinet and the manner in which the sub-
panel is set in. The sub-panel is held down to the cabinet base by means of two flattened wood screws shown by the sketch.

All the wiring inside the cabinet is made with No. 18 bare copper and all wire connections soldered. The front panel which is made of one position hard rubber, the drilling layout which is shown in Fig. 9, is secured to the cabinet by means of four nickel plated screws screwed into four corner posts. The cabinet is made of black wood with a 
walnut finish, and has door on the top, which may be opened by means of the metal ring. The vacuum tube

The wireless weekly : the hundred per cent Australian radio journal
is inserted into the socket through this door. In the upper centre of the front panel is a ruby jewel of the telephone pilot lamp type so ordinaril employed on telephone switchboards. This is placed directly in front of the tube, the light from the tube being transmitted through the glass lamp. This is an indication of whether the tube is burning and from the brilliancy of the light transmitted through the ruby jewel is an indication of how brilliancy the tube is burning. It also allows to the contrast of the set.

Operation is very simple, there being but two controls: (1) filament current control, and (2) wave length control, on right and left sides of the front panel respectively. The arrow on the panel above the filament control knob indicates the direction of rotation of rheostat for increasing filament current, the word OFF being the position where filament circuit is opened by the rheostat handle. The wave length setting for our particular station will be indicated by the engraved line directly above the variable condenser dial.

DON'T BE DISAPPOINTED!

If you are building your own set and not getting the best results, perhaps the material is defective. Only apparatus that has been well tested and approved by us is stocked. We are manufacturing a large range of receiving sets to conform with Government Regulations. These range from Crystal Sets to large Cabinets, and all carry our well-known brand "Radioco." Have you tried our Radio Frequency Transformers? Perfect reception of those distant stations is assured by using these. A high grade transformer at a very small cost.

RADIO COMPANY LIMITED
15 LOFTUS STREET, SYDNEY
Agents and Distributors of Radio Apparatus Appliances and Literature.
This set brings in all the local broadcasting. It has, however, also given some unusual long distance reception for a single circuit non-regenerative set.

### Intervalue Transformers

Continued from previous issue.

**IRON CIRCUIT.**

With the completion of the design of the primary winding of the iron circuit, on which it has to be wound, next claims attention.

The conditions which are impressed upon the iron circuit are, except for the effect of magnetic isolation with those in the primary winding, from which it receives high frequency magnetic impulses, which are subject to rapid variations, and whose strength depends upon the amount in the coil.

The object of producing these magnetic impulses is to couple tightly the primary to the secondary winding of the transformer, without loss of efficiency. It is essential for pure transmission that such impulses shall be absolutely in synchronisation with the current oscillations produced them, and have a wave form identical with that of the current oscillations. The presence of any form of natural or superimposed non-synchronous oscilatory magnetic impulses, or of resistance in the iron circuit to rapid change of flux, or of an unsmoothened change of the wave form, will cause misalignments and distortion of the wave form.

The ideal condition would be an iron circuit having a perfectly straight-line magnetising and de-magnetising characteristic curve. Such an iron circuit is a practical impossibility owing to the hysteretic value of the iron, which even in the softest procusable Stradley iron is appreciable at such a high impulses frequency. Further, the degree of magnetism of the iron is all important, as too little, or too much iron, will set up ripples in the oscillation curve which at once give distortion.

Considering the case of an iron circuit working on the flat part of the upper end of the magnetising curve, the resultant wave of oscillation will be flat topped, and will set up a strong harmonic oscillation of three times the fundamental frequency, which will be impressed upon the fundamental oscillation and distort from its normal phase by the degree.

Such a condition will not only distort the signal being transmitted from the primary winding to the secondary winding, but will also affect the hysteresis of the iron circuit so that it will now have to deal with a secondary flux of double the frequency of the fundamental, and 180 degrees out of phase with it. Such out of phase fluxes tend to neutralise the fundamental, and are responsible for the "frothy" on the articulation. Should the iron be worked in the flat portion of the curve, similar conditions will again emerge themselves, although in less marked form.

When making calculations for the design of the iron circuit, the magnetic inductance of the iron should be in the neighbourhood of 5,000 lines per sq. cm., which is on the flatest portion of the magnetising curve. At this point, rapid changes in the frequency of the magnetic impulse can be obtained with the minimum of distortion or loss of efficiency from hysteresis.

Another source of distortion is from eddy currents in the iron which are eliminated to some extent by laminating the iron circuit. At these high frequencies, however, currents are induced into laminations of, say, 26 S.W.G. iron, of sufficient amplitude to cause ripples in the fundamental oscillations.

It is, therefore, of the greatest importance that when using shell type laminations there shall not be a complete circuit of iron passing round the coil, but that the laminations be in two portions, completely insulated from one another, and further that the laminations should be as thin as is practicable. The actual iron should have high magnetic powers, low hysteresis value, and high resistance.

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Perfect Reproduction and Articulation at Any Range—WIGHT ONLY 10½ OZS.

Compare these specifications with any head set on the market at any price, and see why the TRIMM "Professional" is the biggest value in the Head Set Field—Modified Bellcore cases and ear caps which will not warp like cheap composition; no exposed metal parts to become tarnished; Single bar Tunsten steel magnets formed to shape to insure uniform tapering and magnetising; Cells wound with maximum range of wire of 80 enamelled wire to full resistance of 3000 ohms; Reinforced terminals of stranded wire brought out from coil windings to solder clips; Collar covered with insulating cloth—no fine wire exposed; Arrester gap across cord terminals; Improved type head band covered with resilient tubing—comfortable, light weight, and distinctive in appearance.


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The Amateur's Position
A Word of Warning

The purpose of this editorial is to point out that in our opinion the amateur should at this time take a very careful survey of the future, and see in what direction events are leading him. We doubt if any genuine amateur can look back for a few years without either with a feeling of honest regret at some of the changes which have taken place.

Formerly, the amateur devoted his whole attention to the furtherance and development of wireless, and when there arose the necessity for joint action on the part of amateurs in connection with any threatened entanglement on their rights, all were ready as one body to give the strength which unity alone can give to the voicing of their wishes, with never a thought of allowing private or personal interests to intervene. Rivalry in enterprise is essential to progress, and healthy rivalry has contributed largely to the development made in the science of wireless; this is just as it should be. Every amateur should compete with other amateurs on the technical side but is there not at present time far too much petty rivalry in what may be described as the politics of wireless?

Instead of each amateur or group of amateurs looking at their own interests, and of the welfare of the amateurs as a whole, we find on every side politics in wireless which tend to petty jealousies between the individuals and between one amateur society and another. Criticism is secreted to far more readily than a helping hand, with the result that amateurs destroy the friendly spirit of further and further apart instead of strengthening the bonds of unity.

If it is our honest desire to help to strengthen the amateur's position, then it is clearly our duty to put our shoulders to the wheel and help instead of standing passively aside to criticise others, who, though we may not wholeheartedly endorse their every action, are nevertheless honestly endeavouring to perform the task which had to be performed. What happened has now become history. Party politics were forgotten, and petty differences of opinion were sunk in the interest of forming a strong governing unit in order to meet the emergency. Nobody suggested that every step taken and every action of the government could meet with universal approval; the one thought which was uppermost was to "get on with the war," and bring it to a victorious conclusion.

If we are to be in a position to assert ourselves and to maintain our freedom it can only be done by presenting a united front, so that our demands shall be made with one voice, expressing the wishes of every amateur throughout the country. Such unity in no way interferes with the freedom of the individual nor of separate groups of individuals. It is essential that each amateur should be independent as regards his own domestic affairs, but where united effort is called for, every individual and every party must give its support to strengthen the position of the amateur community as a whole.

WIRELESS WEEKLY

October 19, 1918.

2CM Registers a Moan
AND BRIGHTLY SONG

I wish to appeal to the sporting lovers of some of our most skillful exponents of the gramophone business if they have any.

On Saturday night last, between 10 pm and midnight, I was endeavouring to carry on traffic with 44A (New Zealand). The half-hour's transmission was started out for two hours owing to interference from about four raining valleys, which, owing to their strength, must have been in the Bayford Schoolhill vicinities. These fellows were undoubtedly only listening in on my transmission, yet there was no music at that late hour. I appealed to them twice, both in mode and "please to go to bed" and give me a chance to finish, but my appeal fell on deaf ears, or deafened ears.

Doesn't it occur to some of these unspeakable chaps, that many experimenters send out excellent music, and give a considerable amount of time to entertain such as they, and it is only reasonable to expect that, when one has some long distance Morse to put over, and always out of bed to do it,
The wireless weekly: the hundred per cent Australian radio journal
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Round the Club

LEICHHARDT AND DISTRICT RADIO SOCIETY
FIRST ANNUAL REPORT, OCTOBER 9th, 1923.

After a preliminary and informal meeting of half a dozen enthusiasts, and a certain amount of advertisement in the press, the inaugural meeting of the Society was held on October 16th, in a spare room of No. 3 Ameedley Street, Leichhardt. About 15 attended this first meeting, at which rules and regulations were adopted, and a council elected. From then onward meetings were held weekly, and the first election of members, held on November 7th, resulted in sixteen names being placed upon the register. Monthly meetings have been held regularly since, at each of which fresh applications for membership have been received, and the total has steadily increased from the original 16 to 57 to the end of the financial year. Of course, there have been defections, but they have been comparatively few, only five resignations having been received from a total of 57 members enrolled.

Towards the end of November, the membership had increased to such an extent, and the small room wherein meetings were being held had become too inadequate to accommodate members, that it was decided to take steps to try and secure more commodious premises. The result was that, on January 9th, the fourth business meeting was held in a larger room at the rear of Victory Hall, Johnston Street, "Australasia," and members were held in this room until April 17th, of this year, when another move was made to the present club room.

Coming now to the work done by the Society during the past twelve months, one finds that it has been considerable. During that time 15 lectures were delivered by members of the society, and 8 by non-members. Hunter practice was carried out on a number of occasions, and about 12 general discussions were held. Other activities of the society included visits to the experimental transmitting station belonging to Messrs. Ascham's, and to the experimental station at Penrith, a visit to Mr. Glass, Macarthur's station, and a visit of a small party of members to view a demonstration of colour music at the residence of Mr. Hector. Early in the year members received a visit from Mr. A. Atkinson, Hon. Secretary of the Radio Association of New South Wales, Mr. Thompson being elected as the society's delegate to meetings of that body. Another visitor to a meeting of the society was Mr. Malcolm Perry, who attended the meeting held on January 16th, to explain to members the objects of the Trans-Paciﬁc Tests, to be conducted later in the year. At the meeting held on February 6th, it was decided to enter for these tests, even though the society was not in a position to take an active part in the venture.

It was thought that the moral and ﬁnancial support thus afforded to such an important undertaking, fully justiﬁed the society.

A social evening, held on March 26th, was successful, in spite of the inclement weather prevailing at the time. The same can be said of a demonstration held at the Annandale Theatre, on August 29th, when about 1500 people listened to music and speech, revolved and unfurled suffi ciently to be audible in all parts of the hall.

In December last, Mr. Chas. Macpherson showed his interest in the society to the extent of donating the sum of £1 towards its funds.

On July 22nd a demonstration was given before members of the Leichhardt and Annandale Councils, the results obtained being very successful indeed.

In anticipation of a receiving set being bought by the society, a very substantial aerial system has been erected on the premises, and a quantity of gear is in hand, it being intended to commence the assembly of same as from an early date. The society is already in possession of a crystal set donated by Mr. P. Thompson shortly after its establishment. On May 15th last this gentleman was presented with a gold watch on the occasion of his wedding as a mark of esteem from his fellow members.

Other activities of the society included visits to the Leichhardt and District Radio Society and a technical committee.

WILLIAM J. ZECH, Secretary.

The first annual meeting of the Leichhardt and District Radio Society was held at the club room, 178 Johnston Street, Annandale, on October 9th, when a very large number was spent by members. Three new members were elected, making a total to date of 57. Amongst other business transacted, the past year's activities were reviewed in the secretary's report, which appears elsewhere in this issue. During the meeting a presentation of a hand-made bottle attachment case was made to the Hon. Secretary, Mr. W. J. Zech, as a mark of esteem from his fellow-members, and as a token of appreciation of his services to the society. Mr. Zech was re-elected by acclamation to the position of Hon. Secretary, whilst Mr. S. Williams was recorded the same honour with regard to the position of Hon. Treasurer. The following other officers and committee members were as follows:—President, Mr. U. Kirchpatrick; Vice-President, Messrs. T. Gale and P. Thompson; Councils, Messrs. F. Lott, F. Morrison, T. Gale, and C. Berry; Technical Committee, Messrs. F. Thompson, F. Lott, F. Morrison, and W. Zech; Auditors, Messrs. F. Lott and T. Gale; Social Committee, Messrs. Morrison, Cuthell, Nisbett and Hunter.

On account of the probability of the society losing a number of its most valuable and active members in the event of the society adhering to its decision to hold its meetings on Monday nights in future, a meeting was called to meet the Tuesday night, which comes into force forthwith, the next meeting being held on Tuesday night next, at 8 p.m.

All inquiries relative to the activities of the Society should be addressed to the Hon. Secretary, Mr. W. J. Zech, 146 Booth Street, Annandale.

wireless weekly

October 16, 1923.

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DEMONSTRATION OF WIRELESS TELEGRAPHY AND TELEGRAPHY.

A lecture and demonstration of wireless telephony and telegraphy was given by members of the South Australian Division of the Wireless Institute, on Thursday evening last to the members of the Motor Cycle Club of South Australia.

The meeting opened with a lecture on the production and reception of other waves, by Mr. J. M. Hooper, A.N.S.M., a Vice-President of the South Australian Division.

After the lecture a number of selections were received from the station of Mr. H. L. Austin, BAL, of Narromine. The Secretary of the Motor Cycle Club announced from Mr. Austin’s station the results of trials held the previous Saturday, each item being clearly received and heard distinctly by all in the hall.

Mr. Blund, 5AG, was heard calling some Melbourne experimental stations C8K. The Victoria station’s carrier wave was distinctly heard through the magneto.

Mr. L. C. Jones was in charge of the receiving set.

The demonstration was given by kind permission of the Chief Manager of Telegraphs and Wireless, Mr. J. Mulgas.

SOUTH AUSTRALIAN DIVISION OF THE WIRELESS INSTITUTE.

The monthly general meeting of the South Australian Division of the Wireless Institute was held in the Classics Lecture Room, at the Adelaide University, on Wednesday evening last (October 3rd). There was a large attendance, which was preceded over by Mr. R. H. Collard, the new President.

The minutes of the previous meeting were read and confirmed.

Three applications for membership and one resignation were received.

A circular was received from the Australian Wireless, Ltd., offering to members free licenses to use their patent rights in their experiments.

Correspondence was received from the Victorian Division relative to the new Trans-Pacific Tests, which are to take place this month, while judging by comments there should be a fair number here taking part in these tests.

At the conclusion of the business, Mr. Blund gave an interesting lecture on non-radioactive circuits, showing several which are of extreme sensitiveness.

Mr. Edgar, late Assistant Hon. Secretary, who is departing shortly for America, was presented with an address signed by the officers of the Division, Mr. Edgar will represent the South Australian Division of the Wireless Institute in America, forwarding periodically the latest information obtainable regarding radio matters from the United States.

NEW PLANTS FOR MEXICO.

In Mexico City two new broadcasting stations are now open. During recent months countless efforts have been made to obtain permission and concessions to erect these, but always there has been a hitch somewhere, and proceedings were delayed. Locally great enthusiasm prevails, and it is believed that a ready market is now open for the sale of radio sets and parts.

REDUCED PRICES

Valves: Mullard . . . . 25s.
Ediswan . . . . 25s.
Cossor . . . . 25s.
Phillips . . . . 25s.
Marconi R . . . . 25s.
Amplady 2 filament 30s.
Cunningham 30a 42s. 6d.

Holders: English . . . . 2s. 6d.
American 4s. & 5s. 6d.

RADIO HOUSE

619 GEORGE ST., SYDNEY

Members of Broadcasters (Sydney) Ltd.

Radiotron Valve 201a
4½ x 3½ in. 4mm. 42.6
COASTAL RADIO SERVICE.

STAFF CHANGES.

Mr. L. Mowden, radio-telegraphist, Thursday Island Radio, has been transferred to Brisbane Radio.

Mr. A. Harrower, radio-telegraphist, Brisbane Radio, has been transferred to Thursday Island Radio.

KILLARA RADIO CLUB.

The last meeting of the Killara Radio Club was held on September 28th. After the usual club business and code practice, a very enjoyable evening was spent listening in on a three valve set and also in testing a set which another had brought along.

The Club meets every alternate Friday at the Congregational Hall, corner of Florence and Arnold Streets, at 7.30.

Will intending members please communicate with the Secretary, A. H. Grove, "Moyloong," Florence Street, Killara. Phone J 5001.

WIRELESS MUSIC AT NORTH SYDNEY GRAMMAR SCHOOL.

Quite a successful demonstration of experimental wireless telephony was held at the Church of England Grammar School, North Sydney, on the 8th inst., the occasion being the school’s annual garden fete.

The demonstration was carried out by Mr. Evans, of Messrs. Wireless Supplies Ltd., and without doubt more than fulfilled expectations.

Mr. Marsden (2JM), of Edgelton, supplied the wireless music, which was received on the school’s own aerial, used in conjunction with a tube valve. "Radio" receiver and Western Electric loud-speaking outfit, which was situated in the library. No trouble was experienced in obtaining full volume, in fact at times the music (despite the noises of the drums and bugle of the carnival outside) was found to be far too loud to be comfortable, and had to be toned down considerably.

Other experimental transmitters heard during the demonstration were 2EA, 2G1, 2RA, and 2HF, all very loud and clear.

CROYDON RADIO CLUB.

The Croydon Radio Club held its usual weekly meeting on Saturday, October 6th, at "Wickhambrook," Lang Street, Croydon, 7.30 p.m.

WIRELESS WEEKLY

October 19, 1923.

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AT A PRICE WITHIN REACH OF THE LIMITED POCKET BOOK

Resistance

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Sensitively

Unequalled

ASK TO HEAR THEM TESTED AT

Wireless Supplies Ltd.

21 ROYAL ARCADE, SYDNEY

After the usual business, G. Maxwell Costas gave a lecture on non-regenerative circuits. The lecturer urged experimenters to persist in making their experiments to make a non-regenerative circuit as efficient as they could, as the authorities had banned the use of regeneration with a single valve. Mr. Keith James drew a circuit showing one valve as a radio frequency amplifier, and the second valve as a heterodyne, with tuned plate by means of a variable. Members of the club will be pleased to welcome new members at any meeting.

Particulars can be obtained from the secretary, "Carrwell," Highbury Street, Croydon.

NEWCASTLE AMATEURS.

The Newcastle District Radio Club have now lowered their wave length to 229 metres, and have been carrying out more transmitting tests with mixed, voice and c.w., with very satisfactory results. On Thursday night a special test was carried out which resulted in a SQA report from Mr. Burnhill, of Western Suburbs Club.

(On Wednesday night, Mr. N. P. Olson (2ZX) gave a special demonstration (transmitting) in connection with a lecture condert held in the Trevall Hall, Newcastle, under the auspices of the Newcastle Educational Association. The demonstration was given by permission of the Postmaster-General. There were over 400 people in the hall and the receiving station was operated by Mr. A. Methan, with his valve receiver and magneto. The music and voice were distinctly audible all over the hall, and was highly applauded by the audience. Mr. Olson, also Mr. Stewart (Radio Inspector) would be pleased to have any information concerning the spark transmitter who sat on his key all through the demonstration.

2ZX (Olson, Woonona) may be heard on Saturday and Sunday nights, and almost every night through the week, between 7.30 and 8, and will be pleased to receive reports from any stations hearing his transmission.)
THE BURWOOD RADIO CLUB.

Since 2IX (now 2AY) disbanded, a new club has been formed, known as the Burwood and District Radio Club. There are thirty members to date, and every promise of a large increase of members very shortly.

Interesting lectures, of great use to the beginners are a regular feature of the meetings. Arrangements are also being made for prominent members of other clubs, etc., to lecture and demonstrate. All who are interested may obtain full particulars of time and place of meeting from the Hon. Secretary, H. S. Molan, Burwood Road, Burwood.

CONCORD RADIO CLUB.

On Thursday, September 27th, the above club held their usual meeting at Langston and Anderson's, Bishop Street, Burwood, at 7.30 p.m.

Owing to the above firm selling out, the club decided to transfer their meetings in future to the residence of Mr. Barker, Wallace Street, Concord.

It was also decided upon that the membership should be increased, and new members called for immediately. Intending members should call or write to Mr. Smith, Cheltenham Road, Burwood, or Mr. Barker, Wallace Street, Concord.

CONCORD AMATEUR RADIO CLUB.

The annual general meeting of the above club was held at the club room, at 8 p.m., on Thursday, 9th October, when the officers for the ensuing term were elected. The club decided to alter the name from Concord Radio Club to the above.

It was decided unanimously that the meetings should be held every Thursday night, instead of every first and third Thursday nights, and the programme be as follows:

7:45 to 8:00 — Instruction, supervised by Management Committee.
8:00 to 9:00 — Practical transmission and reception.
9:00 to 9:50 — Barker practice.
9:50 to 10:30 — General replies.

This meeting was well attended, and resulted in three new members being enrolled. The club receiver has been finished, and will be installed in a week or so.

All communications should be addressed to Hon. Secretary, W. H. Barker, "Enriched," Wallace Street, Concord.

WATERLEY RADIO CLUB.

The Waterley Radio Club, at its meeting on the 9th October, received communications from the Wireless Press and the Wireless Exhibition Committee. The letter from the Wireless Press was in regard to an alteration in the procedure of international signalling, requesting the club’s opinion on the matter.

After discussion, it was decided to state that the club was agreeable, with certain suggested improvements, in the matter of the Wireless Exhibition Committee’s request for support, the meeting registered its readiness to assist to its full ability.

The committee working on the receiving set reported highly satisfactory progress, and expected to have it installed within a fortnight. The general committee would meet on the following Wednesday, when the club’s vice-presidents, secretary and treasurer would be elected.

A discussion on the elimination of static followed, the Chairman (Mr. Perry), Mr. Thomson, Mr. Bowman, and others making interesting and valuable suggestions. The meeting was unanimous on the point that the elimination of static would have to be made after it had actually been received, as at present...
sent, it is impossible to devise means to prevent the reception of static, without, of course, cutting out the signal as well.

**USING A CRYSTAL DETECTOR TO RECEIVE C.W.**

By G. Maxwell Oates.

A very simple method of receiving C.W. on a crystal detector is to place an oil immersion microscope in series with the telephone receiver. If the microscope is placed near a gas flame or in a breeze, the diaphragm will vibrate with the noise caused, and thereby vary the resistance of the circuit in which it is placed, C.W. can easily be read in this way, as the microscope acts as a small field.

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**THE KURING-GAI DISTRICT RADIO SOCIETY**

The Society had a very interesting evening on 6th inst. Mr. H. Shaw, who had kindly consented to lecture, was present with his Neutrodyne receiver, on which he delivered an excellent lecture. The subject proved of great interest to the members who were busy with pencil and paper. At the next meeting to be held on Tuesday, 10th inst., Mr. P. Ren- shaw will lecture on Harmonics.

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**A Home Made Tuning Buzzer**

A buzzer that works excellently can be made with no very great difficulty by anyone whose workshop contains only a small outfit of tools. The cost of constructing it is very small, and if we leave out the question of the platinum points needed, a modest amount should cover the outlay on materials. Platinum points are comparatively expensive, but one can sometimes find suitable old ones from discarded or broken pieces of apparatus in one's box of odds and ends.

The core for the buzzer consists of a piece of the best soft iron, 1 1/2 in. long and 5/8 in. in diameter. At one end a hole is drilled and tapped for a 2 B.A. screw. This hole should be 2 in. in depth. Over it is slipped a bobbin made of a length of stuff paper tubing, to which are glued two circular end pieces 1 in. in diameter, cut from hardboard. The bobbin should be given a good coating of shellac, both inside and out. If it is placed on the core whilst still wet, the shellac, when dry, will hold it firmly in place. The core projects 1-1/4 in. at either end.

A short piece of 2 B.A. screened cord is inserted into the hole drilled in the core. This makes the wooden barrel to be accommodated in the latter for winding, or if a lathe is not available the rod can be fixed into the core of a brass pipe, 1 in. in diameter, 1 in. in length, with the aid of a 1 B.A. screw.

The base is made of a piece of clock spring, which must be cut. Two 6 B.A. holes are drilled at 1 in. each end to hold the wooden barrel to the mounting. At a point which coincides with middle of the core, a small hole is made, into this is inserted a platinum wire, which is flattened out by very gentle hammering. When drilling has been done in brass the wire is resoldered by being heated in a bunsen flame and plunged into oil.

The contact pillar is a length of 1 in. brass rod secured to the wooden barrel by a 6 B.A. screw driven into it from below. Through it is drilled and tapped 2 B.A. hole, the centre of which must...
The Australasian Radio Relay League.

By R. D. Charlsworth, Hon. Sec.

There is no doubt that the average wireless man is inclined to be apathetic. This has manifested itself more than ever during the last twelve months, but the cause has yet to be explained.

Since the league asked experimenters to join up there has been an upsurge of activity, and many prominent Sydney experimenters have not yet joined in their application forms.

The league, which has approximately fifty members in this State, but most of these are situated in the metropolitan area. This limits the scope and purpose of the league's work at present, and no comprehensive scheme of working can be carried on.

With the opening up, however, of Mr. Todd, of Yarrawoor and Mr. Harlow, of Armidale, with transmitters, a route through to Queensland is assured. The route through to Victoria has only one intermediate station which is situated at Ballarat, N.S.W.

Thus it will be apparent that many more transmitting stations are needed in the country, so as to provide ample facilities for relay tests, without overworking the few existing country transmitters.

Correspondence from experienced experimenters who desire to erect a transmitting station will be gladly received. Details should be given of their township or not, so that suitable information can be given in such cases. All letters should be addressed to the Hon. Secretary, Box 873, C.P.O., Sydney.

Applications for transmitting licences may be sent to the Hon. Secretary of the league for special endorsement, provided that the applicant intends installing his apparatus for Relay League work. Associate members are also urgently wanted, as at present, with no organisation, few transmitters have sufficient reports of their transmissions, and only a vague idea of these range with various types of receivers. It should be remembered that there is a great deal of credit due to those who receive long distance tests and reports, which are vital to the earnest experimenter. With this in mind, every country receiving station should help the transmitters, and thereby help himself by the knowledge that his receiver is capable of certain ranges under various conditions.

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The wireless weekly: the hundred per cent Australian radio journal

WIRELESS WEEKLY

Amateur Transmitting and Receiving Stations

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The following have removed to the addresses indicated:

G. H. Price, 1 Roderick St., Maroubra, T., to 14 Young Street, Ashfield.

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TASMANIA

Nature of Licence  Name  Address

C. Slatter, M., M.  refusal, School Street, Launceston.
C. Wartell, E.  refusal, B.  T., to A.  T., to Footscray, Footscray.
C. Brookes, L.  refusal, 21 Fremantle Street, Richmond.
C. Smith, G.  refusal, 12 Lawrence Street, Launceston.
A. Legge, A. W.  refusal, 14 River Street, Warratah.

NEW SOUTH WALES

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<tr>
<th>Nature of Licence</th>
<th>Name</th>
<th>Address</th>
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V. Grant, A.  refusal, Lower Belmore Ave., Macksville, B.
C. Gould, W. H.  refusal, Woodlands Street, Manly, B.
C. Stanley, C. A.  refusal, Woolloomooloo, Belmore Ave., Strathfield, B.
V. Gardner, P. S.  refusal, 10 Church Street, Newcastle, E.
C. Grace, E. C.  refusal, Forquhar Street, Wingham, B.
C. Eastwood, G. B.  refusal, Maroubra Bay Road, South Bank, Newcastle, B.
C. Bellerby, C. C.  refusal, 12 River Street, West Kogarah, B.
C. Bawden, A. J.  refusal, "Berthou," 2 La Paglia Street, Manly, B.
V. Walker, W. G.  refusal, "Belfield," 1 Jeffrey Street, Canterbury, B.
C. Spryne, W. J.  refusal, 14 Ross Road, North Sydney, B.
C. Lott, E. G.  refusal, 56a View Street, Manukau, R.
A. Ardern, E. N.  refusal, 251 Young Street, Albury, B.
A. W. Wren, A. G.  refusal, "Palmy," 2 Provincial Road, Lindfield, R.
C. Molloy, A. E.  refusal, Marrangaroo, Ronan Road, Strathfield, R.
C. Cohen, G.  refusal, 12 Mary Street, Manukau, R.
V. Wallace, Miss F. W.  refusal, Royal Arcade, George Street, Sydney, B.
C. Hyett, W. T.  refusal, "Sunny," 2 Belmore Street, Manly, B.
C. Pearson, E. F.  refusal, Church Street, West Tamworth, B.
C. Parkes, E.  refusal, "Pam," 15 Arm Street, Hunter's Hill, B.
C. Leggo, N. C. H.  refusal, 12 Duncan Street, Ardeer, B.
C. Lummis, N. J.  refusal, 22 Gardner's Road, Macedon, B.
E. Knight, C. I.  refusal, "Parnell," 25 Clun Street, Northwood, B.
C. Yarrows, G. B.  refusal, 32 Francis Street, Drummoyne, B.
C. Harper, C.  refusal, 12 Neill Road, Randwick, B.
C. Johnson, D. W.  refusal, 12 Harry St., Scone, Scone, G., to Clarence Street, Bowral, T.

2 Z M Davis, P. M.  refusal, 27 Mornington St., Waverley, B.
2 R Dixon, R. R.  refusal, 9 Mornington St., Waverley, B.
2 R O Willmott, T. B.  refusal, Coromandel Kearney, South Granville, T.
2 X Campbell, J. M.  refusal, 123 Dolphin Street, Randwick, T.
2 O Whittaker, A. T.  refusal, 31 Railway Crescent, Bankstown, T.
2 B D Forsyth, E. F.  refusal, "Pakenham," 451 Railway Road, Botany, B.
2 A R Hey, R. E.  refusal, 570 Military Road, Manly, B.
2 D E Benham, W. P.  refusal, "Wakana," 1 Lord Street, Roseville, B.

The following have removed to the addresses indicated:

1783 Bacon, J. A.  refusal, 12 Harrington Road, Stanmore.
2706 Starkey, E. C.  refusal, 12 Stephen's, 15/28, Henry and Ross Street, Sth, Randwick.
2705 Steers, H. V.  refusal, 12 Henry and Ross, Sth, Randwick.
2763 Love, J.  refusal, 12 Park Street, Ashfield.
2 G Y North Sydney Radio Club (b)  refusal, 12 Henry and Ross, Sth, Randwick.

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The best brains of the Wireless Engineering Department and Research Laboratories of our principals, The General Electric Company, Limited, of England, have been concentrated for some time on the production of Receiving Sets which conform with the Government’s Regulations, and which will be minutely adapted for the perfect reception of the comprehensive programme to be broadcasted by the House of Farmer’s.

This accumulated knowledge and experience has resulted in the production of GECophone Receiving Sets—manufactured in the Company’s Telephone Works at Coventry, England, which cover an area of nine acres and are equipped with the finest and most up-to-date machinery in the world.

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