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All of our Sets receive both Farmers and Broadcasters Services*

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OFFICIAL ORGAN OF THE AUSTRALASIAN RADIO RELAY LEAGUE.

Vol. 3.

January 25, 1924.

No. 16

We Are Not Inquisitive, But——!

It is interesting to note that in Europe and America laws and regulations governing wireless are constantly being changed.

The reason for this is that wireless conditions are constantly changing.

Perhaps no country in the world has greater need for up-to-date wireless control than Australia.

A land of vast spaces and big distances, direct communication is necessary in order to keep people outback in touch with the country's progress.

The telephone and telegraph systems will in a few years become unnecessary owing to the rapid advance of wireless telephony.

A few years back in Hall's Creek, Western Aus-

tralia, a drover amputated a man's leg, according to instructions given, by a doctor at the other end of the telephone, 200 miles away. The man recovered.

How many deaths have occurred through the lack of direct communication with large centres? And how many lives could be saved by an efficient wireless system.

We have standardised Government telephones; why not standardised Government wireless sets capable of receiving and sending?

Is it not time that the Commonwealth Government took wireless seriously?

Does the Government intend to keep in touch with wireless progress?

What does Mr. Malone think about the business?

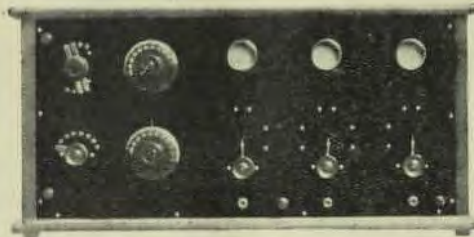
Roster for Week ending 30th January, 1924

	7.30 to 8.0	8.0 to 8.30	8.30 to 9.0	9 to 9.30	9.30 to 10
Thur, Jan. 24	2 RA 2 GR	2 IJ 2 UW	ZG	2 YI 2 JM	2 YG
Friday,25	2 IJ 2 GR	DS2 "	"	2 ZN UR 2 YI	"
Saturday, ..26	2 RA 2 GR	2 IJ "	"	2 YI 2 ZN	"
Sunday,27	2 RA 2 GR	2 DS "	"	2 JM "	2 YI
Mon.,28	2 RA 2 GR	2 IJ "	"	"	2 YG
Tues.,29	2 IJ "	2 DS "	"	UR 2 YI	"
Wednes., ...30	2 RA 2 GR	2 IJ "	"	2 ZN	"

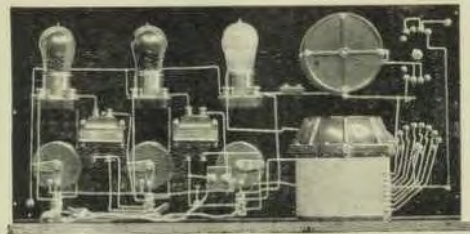
WIRELESS WEEKLY CUP COMPETITION

EXAMPLE SET

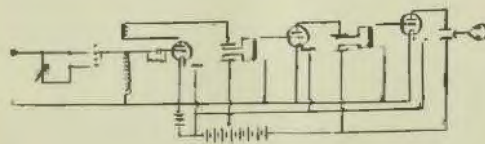
FURTHER DETAILS



1. Completed Set.



2. Interior of Set.



3. Circuit Diagram

THREE VALVE EXPERIMENTAL SET.

This set consists of 24 x 12 Bakelite Panel; a variocoupler, with a wave length range from 200 to 1500 metres; a .001 mfd. variable condenser, with vernier adjustment; series parallel switch, switch and studs for varying the wave length; one 6 ohm. rheostat, and two 30 ohm. rheostats; jacks and plugs to enable the use of one, two or three valves; 2 Jefferson transformers; one UV-200 radiotron valve and two UV-201A radiotron valves; 3 bezels, set in panel; 2-40v. Ever-ready high tension batteries are placed inside cabinet, the connection being made with flex and Morse clips; all insulation throughout is of the best Bakelite.

A considerable amount of interest has been aroused by the publication of the details of Wireless Weekly Cup Competition last week. Numerous enquiries have been received from wireless enthusiasts who are anxious to compete; most of these will be answered by post. The indications are that our readers will have a hard task to choose the best sets.

Any of the dealers advertising in Wireless Weekly will be pleased to advise any amateurs of the parts required. The sets should be simply, yet strongly made. Elaborate cabinets and panels are not necessary.

In the meantime competitors are asked to submit their nominations early, in order to assist the publishers to prepare the blocks from the photos and drawings sent in.

The accompanying illustrations show the method in which each set will be published. The circuit of the set must be shown. The diagram need not be elaborate but should show clearly the wiring and all necessary details.

What is Required.

Competitors are required to submit:

1. One photo, not less than 4in. by 3in., showing the set complete.
2. One photo, not less than 4in. by 3in., showing the wiring of the set.
3. An ink diagram not less than 4in. by 3in., showing the circuit and wiring.
4. A small paragraph of not more than 100 words explaining the set.
5. The nomination form shown below, witnessed by a member of the committee of a radio club or any trader advertising in Wireless Weekly, or a local J.P.

Queries:

- T.F.M. (Balmain): You may enter for both cups.
 Prospective (Camberwell, Vic.): The illustration on this page shows what photos are required.
 R.L. (Hlawarra): Any of our advertisers will supply you with a list of parts required for a 2 valve set.

NOMINATION FORM

I _____ of _____
 _____ desire
 to enter my _____ set in

Wireless Weekly Cup Competition. I agree to abide by the conditions set down by the proprietors, and I solemnly declare that I am a wireless amateur as defined in page 2 of W.W. No. 15, Vol. 3, of January 18, 1924.

(Signed) _____

Witness _____

The "Ham Special Receiver"

(By Brooke Sawyer.)

Here is a straight-forward description of a Reinartz tuner, with a range of 140 to 250 metres, for amateur reception. Although directions are given for increasing the range to include the broadcast stations, it is intended primarily as an extremely selective set for amateur use, combining efficiency, ease of control and moderate price.

For a long time I have held the conviction that the amateur transmitter is better than the amateur receiver. My reason for holding to this belief is that a wave once propagated into space keeps on going, its amplitude getting smaller and smaller until it is not strong enough to affect the average detector tube. If we can boost up the small amount of energy received from a distant transmitter, or can conserve the energy received so that none of it is wasted, we are going to do better receiving. The amateur needs a receiver that is easily handled. In relay work he cannot be bothered with a multiplicity of controls. The receiver must be constructed for a low price, and, above all, it must be selective and efficient.

What, then shall we use? Radio frequency is probably a good answer, but

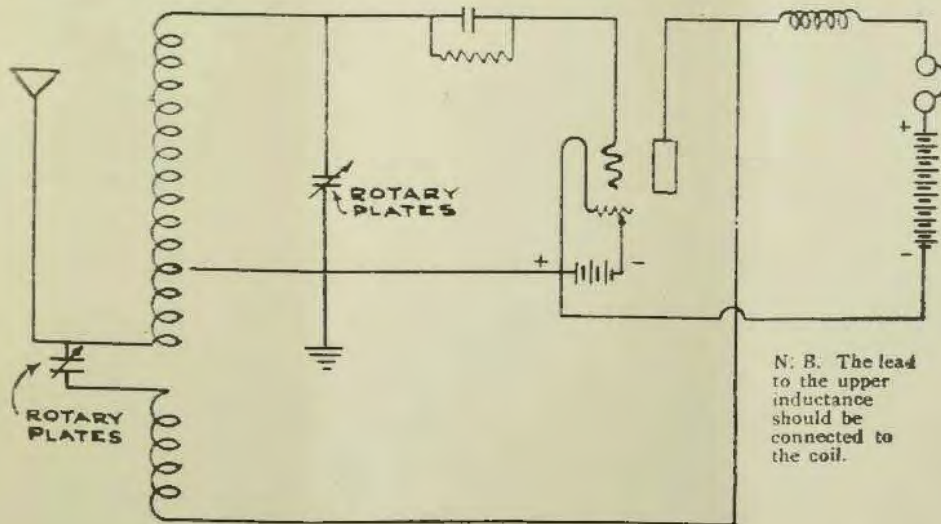
there are no RF transformers on the market to my knowledge that are efficient on the band of 150 to 200 metres, and a super-heterodyne is too expensive. If we use tuned radio frequency our control is made too complex. Also it takes two stages of ordinary R.F. amplification to make up for a good regenerative circuit. We are now practically reduced to a good regenerative, and we shall make our choice from that type.

For ease of control, selectivity, and moderate price, the justly famous and widely used Reinartz circuit appealed to me from the first. It may also be built for a very low cost. Since beginning to develop a good "Ham" receiver I have built eight sets of that type, and have at last found one that I considered good enough to put in a mahogany cabinet, and I think that

any amateur who handles any amount of traffic will find himself well repaid for the effort needed to build one.

Nothing remarkable is claimed in the design of this receiver. All that has been done is to guard against as much loss as possible so as to make use of every bit of received energy that we can. Although at this writing the season has barely commenced, I have heard every district except the first for some time past, and I have not burned the midnight Mazda to do it.

We will begin with the tuning inductance. This, with the tuning condenser, will give a range of 140-250 metres—just what we want and nothing wasted. The tube on which the inductance is wound is 4 in. in diameter and 5 in. long. The material is thin Bakelite, thin so as to reduce dielectric loss. The wire is No. 18 D.C.C., space wound. The method of winding is as follows: If you have no lathe or other winding machine handy, put two short pieces of lath, about a foot long, in the jaws of a vise. Close to one end pass between the pieces of board the end of the No. 18, and near the other end No. 22 D.C.C. The No. 22 is for the spacing. You will need about 50 feet of each, but better have plenty of No. 18, so that you will have enough to do the wiring with when you assemble the set. The tension on the wire will be regulated by



Hook-up for "Ham Special" Receiver

the pressure on the vise. Before you start winding study the location that the inductance is to have in the set, so that you will not have any unnecessarily long leads. In order to keep the radio-frequency paths short it is well to place the coil between the two condensers so that the condensers are at either side and not at either end of the inductance. The reason for this is obvious. Now begin the winding about half an inch from one end of the tube, keeping the tension on the wires as strong as possible so that you won't have to use any "dope" to hold the windings in place, and see that the No. 22 gets between each turn of No. 18. Wind on eight turns of No. 18 and then cut and anchor it. This is the feed-back winding. Commence again about 1 in. farther on and wind on 29 turns more in the same direction. Wind off the No. 22, and if you have anchored the No. 18 properly and kept the tension very tight, the winding should be perfectly firm. This is the hardest job in the whole set, the rest being easy.

The inductance is now complete and we will turn to the variable condensers. The grid tuning condenser has a maximum capacity of .00025 mfd., and the feed-back condenser .0005 mfd., corresponding to the average 11 and 23-plate condensers respectively. The condensers should have extremely low losses. Those that I used are 11 and 21-plate Cardwell, having the advantages of very low loss and being entirely free from hand capacity if the rotors are connected to the ground and aerial respectively. The reason for using a small grid tuning condenser is two-fold: First, the greater the ratio of inductance to capacity, within certain limits, the better the signal strength. Second, the change in wave length per degree displacement is comparatively small, making a vernier adjustment unnecessary, although it is convenient. If a large condenser is used a vernier will certainly be necessary, as, due to the low damping of the circuit, it is extremely selective.

The grid condenser should be a good mica one of from .00025 to .0005 mfd. The radio-frequency choke shown in the phone lead is a Kellogg No. 503, 100 milli-henry iron cored. Although not shown in most receivers of this type designed for broadcast reception, it is necessary at higher frequencies as the capacity of the phone cord or primary of the first audio-frequency transformer is usually sufficient to short-circuit the radio-frequency feed-

back to ground, causing failure of the set to oscillate. I use a universal Bradlevstat to control the filament of the detector tube, connected up as for the UV-199 tube, but it works perfectly for any tube connected in this way, and is very convenient when changing from one type of tube to another.

Now, for the wiring and assembly. The set is wired entirely with No. 18 and "point-to-point" or "bee-line" wiring is used to make the leads as short as possible. You will notice in the diagram that the aerial is brought directly to the end of the tuning inductance so there are no "dead ends" to absorb energy. Although I have shown

ENGLAND LEADS.

A correspondent of the "Daily Mail" says that a wireless station at Portsmouth has picked up concerts broadcasted in Australia.

He suggests that there should be an endeavour to have relay concerts for the benefit of London and the provinces.

America, which is several thousand miles nearer Australia, has not yet reported any such receptions.

taps in the aerial-ground portion of the inductance they are not really necessary, and the ground may be brought off the fourth turn without any disadvantage. I brought off six taps, tapping every turn from the aerial end, up to the seventh turn. I cannot see that this is of any great advantage, however. The rest of the wiring speaks for itself. Plan your set so that all leads will be as short as possible, especially those carrying any radio-frequency.

As to the operation, this receiver is ideal for a one-armed paper hanger, but he will not have to be nearly as busy as he is supposed to be when at work. When everything is connected up light the tube to its normal brilliancy, set the grid tuning condenser about the middle of its scale and increase the feed-back condenser gradually until oscillations start; then reduce the filament current until oscillations stop and increase it until the tube just does oscillate. This is the point of maximum sensitivity. Now, if the set is properly constructed and wired, it should oscillate freely over the entire range. Once you bring in a

station he is there. You don't have to risk losing him by trying to better his signals by fussing with a grid and plate variometer. When you've got him, you've got him, and that's all there is to it. You will be surprised what little trouble the local "sync" rectifiers will cause you, and you are not losing any sensitivity by reason of its selectivity.

If any broadcast fan has been so charmed as to wade this far there is a word of hope for him also. If he will wind on 50 turns in the grid tuning inductance and use a slightly larger condenser, such as a .00035 mfd., and tap the grid inductance into three equal portions, it will cover the whole broadcast range, but, because of the "dead ends," will not be quite as efficient as the "Ham Special." Using such a set in the Heart of Los Angeles, I have been able to bring in KPO with excellent audibility with KFI, but not KIH, going full blast. There are very few standard regenerative sets that can do this. At Redlands we had KSD in St. Louis on the Magnavox for half an hour one evening at the first of the summer.

No amplifier has been shown in the diagram, as most amateurs have a two-step in a separate cabinet. As one stage of audio-frequency will give all the volume desirable, it could be built very conveniently into the tuner. The broadcast receiver mentioned above is of that type. Putting a negative bias on the grid of "A" type amplifier tubes is highly recommended. Be sure to connect the grid return as shown in the directions packed with the tubes.

This set is so sensitive that the advantage of the low one-wire aerial can be made use of fully. Using a single wire about 50 feet long and 20 feet high with a single rubber-covered buried counterpoise instead of a ground, 6TV can be heard all over the house and out on the street on a one-step. Atmospherics are practically nil with this type of receiving antenna.

If anyone has pointers on the construction of the "Ham Special" or any criticisms of it I shall appreciate hearing from him very much. I have worked very hard trying to develop a good amateur receiver, and shall be glad to know of the efforts of others along this line.

—"Radio."

FOR SALE.—Well made Loose Coupler. £2. Apply, 1 Wood Street, Randwick (after 6 p.m.).

Again That One-Tube Receiver

By Carlos F. Mundt.

This article describes the adaptation of a previously described set to honey-comb coils. Its construction and operation is simple and the results are remarkably good for one tube.

In an earlier issue of Wireless Weekly an improved single-circuit receiver which possessed the advantages of increased selectivity and the reception of spark, C. W. and 'phone with equal facility was shown. So many communications have been received regarding the adaptation of this receiver for honey-comb inductances, especially for 'phone work, that it was deemed advisable to present the matter anew.

Required apparatus: One .001 v.c.; one .0005 v.c.; one fixed R-G coil mounting; one movable R-G coil mounting; one 8 x 9 x 1.8 in. panel; necessary socket, tube, 'phones, batteries; grid condenser and leak, 'phone plug and jack.

Referring to Fig. 1, it will be seen that the .0005 variable condenser is here permanently shunted across the tickler (movable) coil. This consti-

tutes a tuned tickler and is the inherent advantage of this set, which is here designed especially for 'phone reception. Using this arrangement and a WD-11 tube, one experimenter in Princeton, N.J., was able to hear the conversation and music of two Los Angeles broadcasting stations, 2500 miles — one tube!

Fig. 2 shows the panel layout, which is indeed neat and compact. If desired, the binding post connections may be placed in the rear. For portability, a handle may be placed at the top of the cabinet and space provided in the interior to accommodate a dry cell or more, depending whether WD-11 or UV-199 or C-299 is used.

The inductances will vary with the antenna system, but it is a good plan to provide a goodly number in order to allow various combinations. One each of 25, 35, 50 and 75 turns would

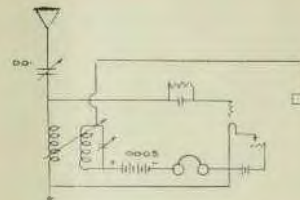


Fig. 1. Hook-up for One-Tube Receiver

be advisable. Use the larger ones as tickler, and don't forget to reverse the tickler leads in case you do not get oscillations at the start.

—Radio

Neutrodyne Sets

Patent Fight.

We mentioned in these columns some time ago the ingenious circuit developed by Professor Hazeltine, employing a principle which had not hitherto been put to practical use in receiving sets. It is not a simple matter to build a good radio-frequency amplifier, and the Hazeltine method for neutralising the capacity coupling in the tubes permitted increased stability and reliability. The Independent Radio Manufacturers, an organization of the better known radio manufacturers not connected with the Radio Corporation, have been building and marketing these neutrodyne sets and have apparently found a good market for them.

It now appears that the Radio Corporation, through its associated company, the General Electric Company, had in its archives a patent which it believes covers the ideas involved in Hazeltine's patent, and the Corporation naturally started suit to stop the manufacture and sale of the neutrodyne sets.

Although the suit is brought against the F. A. D. Andrea Company, it will be defended by the Independent Manufacturers' Association, which has been informed by their eminent counsel, Penny, Davis, Marvin and Edwards, that there is a valid defence against the Radio Corporation's suit. We sincerely hope that such is the fact, because it would be extremely unfortunate for the progress of radio if the Radio Corporation should acquire too monopolistic a control over its development. Healthy competition is absolutely necessary if the public is to be properly served in the radio field.

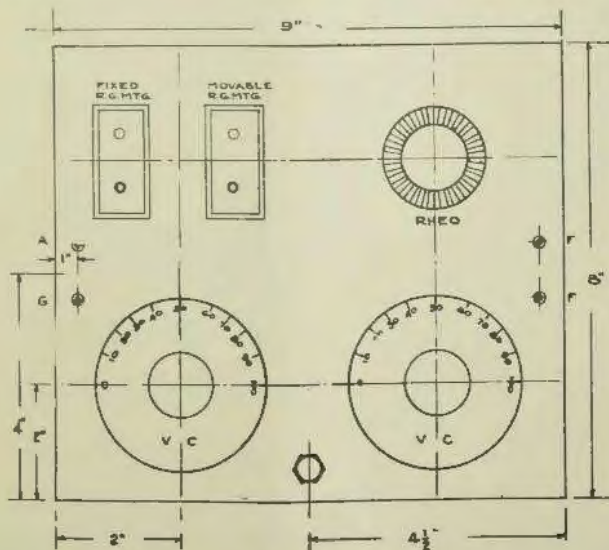


Fig. 2. Panel Layout

Economical Valve Circuits

These circuits have been devised solely for the purpose of giving economical working as regards filament current consumption. Being typical dual circuits with some interesting refinements, the experimenter can derive a knowledge of the operation of dual amplification receivers and judge their merits by testing out the arrangements described, which probably represent the best dual systems.

For those who like to use their valves to the best advantage, dual amplification is thoroughly to be recommended. A noteworthy single valve and crystal circuit is illustrated in Fig. 1.

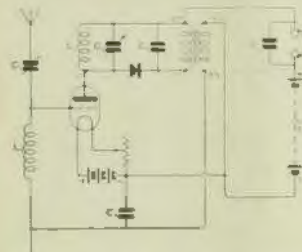


Fig. 1. A single dual circuit. With this arrangement the tuning of the plate circuit is broadened as a result of resonating the crystal detector and tuned anode circuit in series.

This circuit will be found to be very sensitive, stable, and easy to control. The aerial tuning inductance L1 and the tuned anode coil L2 are the normal size. The aerial tuning condenser C1 may be of 0.00075 mfd. capacity, and the tuned anode condenser C2 of 0.00025 mfd. capacity. The fixed condenser C3 connecting the earth to the filament should be of 0.0002 mfd. capacity. The other two fixed condensers C4 and C5 should both be about 0.001 mfd. capacity. On wave lengths other than those set apart for broadcasting the set may be made to oscillate gently and completely under control by coupling L1 and L2 together.

The crystal detector used in all these circuits is the zincite-bornite or perikon detector, which is more stable and robust than the usual cat-whisker types. The leads to the detector should be reversed to find out which way works better. Using a "Metal" R valve, which was found to be satisfactory, about 46 volts H.T. gave the best results.

When it is desired to add another valve this should preferably be a straightforward high frequency valve. The addition of another dual valve will give louder results, but the arrangement is not advised.

The two-valve circuit is shown in Fig. 2. The coupling condenser C7 should be about 0.0002 mfd. capacity, and the radio-frequency choke L4 about coil No. 200. If a bigger choke is used the circuit tends to oscillate, while if a smaller choke is used the signals are weakened. The values for the other components are the same as in Fig. 1.

This circuit will be found to be just as stable as the first one. When broadcasting is not in progress it may be made to oscillate gently, either by coupling L2 and L3 together, or by means of electrostatic reaction, by connecting a very small capacity variable condenser in the position CB. This condenser should be constructed to have a negligible minimum capacity, and may consist of two insulated metal plates, which may be moved well away from each other.

I.F. transformer coupling may be used in either circuit, the one-valve circuit being shown in Fig. 3. This gives about the same signal strength

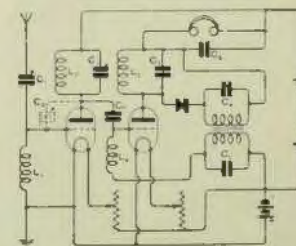


Fig. 2. The efficiency of a high frequency amplifier is impaired when converted into a dual circuit. In this diagram the first valve operates only as a H.F. amplifier.

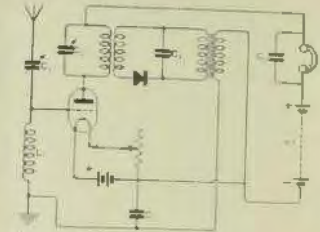


Fig. 3. In this circuit the detector is operated through a transformer, so that the crystal is not liable to be rendered inoperative by the potential of the H.T. supply, while less damping is present in the tuned plate circuit.

as Fig. 1, and is, if anything, a little more stable, but it is not quite so convenient in use.

Now, as to results. Using Fig. 1 on a sheltered aerial 23 miles south of 210, a small Brown's loud speaker may be worked well in daylight. A large number of amateurs have been heard, including 2ZK (near Birkenhead) and 2JP (Yorkshire), 2ZK using telephony. Fourteen different French amateurs on 180 metres have also been logged.

Using the two-valve circuit shown in Fig. 2, all the B.B.C. stations may be listened to after dark, some needing a trace of reaction. Glasgow and Birmingham will often work the loud speaker towards the end of their evening programme.

Finally, those people who have hitherto used a valve detector will be interested by the purity and absence of distortion of the signals obtained by using these circuits.

—"E. J. M." in "Radio Review."

J. L. SCOTT
 80 Hunter Street
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Star Radio Instruments
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 Parts.

Broadcast Sets
 Hetrodyne and Buzzer
 Wavemeters.

Where is the Alternating Current Filament Tube?

About eight years ago, one of the well-known writers on radio matters pointed out some of the advantages to be gained by completely changing the design of vacuum tubes. Instead of getting the electrons from a hot filament they were to be obtained from a thimble, which itself was to be heated by a tungsten filament inside the thimble. The detecting efficiency and amplifying power were very much better, and other advantages, not so evident at the time, were to be gained by introducing this change in tube construction. Alternating current power might be used for heating the filament and still the sixty-cycle hum would not be bothersome, as it is to a prohibitive extent with the ordinary form of tube when operated on the ordinary house wiring system.

Of course, it is generally easier to suggest an improved tube and make laboratory models than to get such a tube into successful commercial production; the placing of any device on

the market must necessarily lag appreciably behind the first experimental models. In this case it was about six years before the new type of tube could be manufactured in a satisfactory manner, even though a great research laboratory had been working on the task. About a year ago, Doctor Hull, one of the best known research men of the General Electric Company, read an interesting paper before the Institute of Radio Engineers, telling of his work in this field, which had culminated in the production of a satisfactory alternating-current filament tube, or uni-potential cathode tube, as they were first called. The newly developed thoriated tungsten which his laboratory had developed was just what was needed to build the thimble for this new tube.

The early experimenters had been obliged to use tungsten itself for the thimble, and this construction required such a high temperature for the heating filament that after a few hours' use (sometimes after a few minutes only) the filament was burned out and a new one had to be inserted and the tube re-evacuated. The XL metal (thoriated tungsten) gives off elec-

trons freely at low enough temperatures so that the heating element, the enclosed tungsten filament, need not be operated at such destructive temperatures as was necessary at first.

In Doctor Hull's paper the characteristics of the new tube were unreservedly praised; it seemed to be the most remarkable advance in tube construction since the grid was first introduced by De Forest. As the author of the paper stated at the time—it made at once possible a receiving set which employed no batteries at all; radio-frequency amplifier, detector, and audio-frequency amplifier could all be run from the electric power wires with which practically every house is equipped. The alternating-current power could be used for the plate circuit as well as for the filaments. It seemed that, from the standpoint of its power supply, the perfect receiving set was at hand.

FOR SALE—Twenty Yard Aerial, complete with fifteen feet masts and Telephone Head Set. Apply, Frank Smith, Box 2234, G.P.O., or City 9148.

PROTECT YOUR VALVES FOR 1/-

Why be troubled with the inconvenience & financial loss when your valve burns out?
WE HAVE A SUPPLY OF VALVE FUSES AT 1s. EACH

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and when you have used "KELLOGG" material you will never use any other. All the leading writers of the world advise you to use the best, and this means "KELLOGG" NONE BETTER. WE ARE SOLE AGENTS FOR N.S.W.

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The Outlaw Set of Paris

After many months of mysterious transmissions, the "Mystery Set" of Paris was at last located, writes Lloyd Jacquet in "Radio." And even now, it retains some of that enigmatic and puzzling atmosphere which envelops all mysteries. For fully a month, the mysterious transmitter, hidden somewhere in the big capital of France, baffled the efforts of the police, the military, and the amateurs, who all bent their energies toward its location. Yankee ingenuity, however, kept the radio field guessing, and it wasn't until a few weeks ago that the entire story of the "Zero Post" was revealed.

It could be said that the beginning of this remarkable set was in 1910, when R. Gouraud, a young amateur in New York City, began experimenting with radio. He went through the usual school of the amateur, and followed the progress of the science closely, until the beginning of the war, when he went to France in 1916 with the American Ambulance Corps. He was later transferred, upon America's entry in the conflict, to the aviation section at Avord. After the war, he chose to stay in France, and, once settled, he plunged deeper than ever into his hobby.

Gouraud's first appearance into the limelight happened over a year ago, when he announced that he was using a rather unusual kind of radiating system with which to send out signals to the French amateurs. It was a four-wire prismatic cage, about 30 feet long, strung 40 feet above the ground, and attached to a counterpoise. The distance between the counterpoise and the aerial was about 25 feet, and consisted of a four-wire arrangement. But, unlike other counterpoises, this one was not placed under the aerial, but on the same level with it. Thus the effective height of the "ground" connection was also that of the aerial, and he had, theoretically at least, no ground to his set. Great success attended the use of this system.

These experiments in transmitting led the young American to further work, and he attempted further developments in the transmitting and receiving fields. In 1922, he developed a combination sending and receiving set which was very practical. It was so arranged that it required no switch to transfer over from sending to the receiving position. In other words, a conversation could be carried on exactly as with an ordinary telephone—

each person equipped with such a set being able to talk back and forth without interruption. The first set was crude enough, compared to the many refinements which were developed later, and incorporated into the mysterious set.

So, in a dark corner of the radio laboratory of the young experimenter was born the "Zero Post," which created such a storm last spring, and roused so much furor among radio fans and engineers as well. It was a transmitter of 800 watts input, and workable on wavelengths up to 1600 metres.

Cutting in boldly one night, as everyone was tuned in to listen to the Eiffel Tower, Gouraud opened up on his new set and announced slowly in English that he was an American station testing. He talked, sang, and then announced that there would be further entertainment the next evening, and, with the usual "Bon soir mesdames et messieurs," closed up for the evening.

Transmitting without a licence is, of course, strictly prohibited in America, as it is in France, and Gouraud had no licence. He had hit upon this idea, however, to see how far his set would carry.

The results came soon enough. The daily newspapers in Paris came forward with a long story of spy stations, others maintained it was a publicity stunt, and a third that it was an English station. Suffice it to say that the Paris ether was surcharged with excitement.

The young inventor continued his broadcasts for several days. Occasionally he would put on a record, and give his audience some jazz music, presumably of American origin. The newspapers began to publish regularly his programme, and to give out information as to the wave length, hours of transmission, etc. Gouraud must have been chuckling to himself!

Soon, however, the military and the police took a hand in the matter, and automobiles equipped with direction finders began to scour the Paris streets and the suburbs. They located the set as far as very back block in which it was, but there the scent ended. They could not locate the mysterious "Zero Post."

The inventor himself came out with all of the details of the installation, and thus ended the career of one of the greatest radio mysteries that French radio fans ever beheld.

Sealed Sets

THE THIN EDGE.

Alterations or modifications of the regulations about the sealing of wireless receiving sets for broadcasting are now sought by some of those interested in wireless.

It is contended that a rigid insistence on the present regulations will largely reduce the value of broadcasting as far as the country is concerned. A strong appeal will be made to the Federal Ministry on this point. It is contended that the sealed sets, as passed by the Postal Department, are not effective beyond a range of 130 miles, while the "open sets" used by amateurs, can receive broadcasting up to 500 miles.

"Sealed sets have been described as wireless walls," said one wireless enthusiast to-day. "There is only too much of the wall about them; things cannot get through."

"Why should not the Postal Department charge a blanket fee to cover all broadcasting, and share it with the broadcasting companies in proportion to be determined?"

Failing this, it will be urged that more elasticity should be given, with the object of making the wireless sets more effective. It is suggested that those who care to subscribe to more than one company should be allowed to have receivers which can be switched from one wavelength to another.

BOOKS ON WIRELESS

Wireless Telephony.—A Simplified Explanation by R. Bangay, Price 3/9 posted.

Amateur Book of Wireless Circuits, by F. Haynes, Price 3/9 posted.

Directive Wireless Telegraphy, Direction and Position Finding, by L. Walter, Price 3/9 posted.

Wireless Receivers of To-Day. Their Use and Adjustment, Price 2/3 posted.

N.S.W. Bookstall Co. Ltd
476 George Street, City

Firpo's Admirers Quickly Hear of His Defeat

The excitement-loving South Americans who hoped their Pampus bull would bring back to them the world's approbation as its hardest and most accurate biter, naturally wanted to hear of Firpo's progress toward the championship as quickly as possible. The Radio Corporation's channel to Argentine was given the task of carrying the message, and we are informed by the corporation, that a word description of the battle was broadcasted in South America with only fifteen seconds lag. Fifteen seconds after Firpo had Dempsey hanging through the ropes, the fight fans of his native country had the news, and were probably more excited over it than was Firpo himself.

The natural question which occurs to one is: What were the radio waves doing during that fifteen seconds? Their 6,000 mile journey to the southern hemisphere should take only one-thirtieth of a second. And that is all

the radio waves did take. The rest of the time was spent in translating words into telegraphic code and then back into words again. We are not equipped to carry on telephone conversation with South America as yet, but there is a reliable telegraph channel in operation, which was used on this occasion. The description of the fight was sent by telephone to a despatcher in the receiving room of Radio Central; here it was immediately changed to telegraphic code and punched on a tape; the tape was at once put into the automatic key which actuates the huge Alexanderson alternators and so the code was flashed to Argentine. Here the code was changed to words by an operator, who at once sent it out through a local broadcasting station.

Of course that it is not quite as satisfactory as if the Buenos Aires friends of Firpo could have heard the punches and the cheers, as we did, but still, to get the news of the fight, 6,000 miles away, only fifteen seconds after the event, shows that we are making progress in communication.

Radio Insurance

We have at hand a very interesting report of the hazards of radio, the report having been compiled by a committee organised for the purpose of investigating them by the National Safety Council, an organisation serving the insurance companies of America.

Considering the great number of receiving sets which have been put into operation during the last year or two, the report says, "the number of accidents has been very small." The principal hazards of radio are then enumerated. It turns out that they have very little to do with radio itself. "Collapse of antenna, masts, due to insufficient guying" (the same thing happens to clothes poles), accidents due to "climbing in unfamiliar places" (small boys have always done that before the days of radio), "gases from storage batteries," and "putting nails instead of fuses in the lighting wires," are among the risks noted. Evidently

Continued on page 10

ANNOUNCEMENT

WE are pleased to notify our Customers of the Wholesale Trade, that we have just received a new shipment of all Radio Parts which may be inspected at our showrooms

PACIFIC ELECTRIC CO.
SECOND FLOOR, KINCOPPAL CHAMBERS
No. 38, MARTIN PLACE - SYDNEY

the use of the modern receiving set does not necessitate any of these risks.

A year or so ago we went on record as saying that the installation of the ordinary, small, low, antenna used for receiving would add but little to the risk of fire from lighting, especially if a proper arcoster was put in. Such now seems to be the accepted fact, as the report continues:

"Generally speaking, fire insurance companies will not be affected adversely by the installation of radio receiving sets, even with an outdoor antenna. It is suggested, however, that those who wish to make certain of this point, call up their insurance broker, who will either give a verbal consent to the addition or will issue a radio permit endorsement for the fire insurance policy without extra charges or change of rate."

If there is no change of rate in the fire insurance we may rest assured that there is mighty small risk incurred by the installation of our receiving sets!

Electrocuted

WIRELESS EXPERIMENTER.

Tragedy at Haberfield.

About 3 p.m. on Monday, Mr. Francis Leonard Moore, aged 29 years, an electrical engineer, met his death while experimenting with a wireless set at his residence at 84 Dalhousie St., Haberfield. He had an aerial in the back yard, with a number of wires leading into the room in which he was experimenting. His little daughter, aged 8 years, was accustomed to switch on the current under instructions from her father.

When telling his daughter yesterday afternoon to go and turn on the current, Mr. Moore asked his wife, who was also in the room, to remain, remarking that he never knew when he might fall across the wires. After giving

the order for the switch to be turned on he suddenly called out "Oh," and fell on his side. His hands were clutching the wires, and were badly burnt.

Mrs. Moore obtained a coat, and, covering her hands, dragged her husband away from the wires. Dr. Daly, of Haberfield, and Dr. Taylor, of Five Dock, were summoned, and they pronounced life to be extinct. The fingers which had grasped the wires were burnt to the bone.

Anniversary of the British Broadcasting Company

November 14th, 1923, marked the first anniversary of the British Broadcasting Company, and to celebrate the occasion speeches were broadcast from 21.0 by Senatore G. Marconi, and by Mr. J. C. W. Reith, Managing Director of the Company.



Radio Company

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*Of importance
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and to those
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DURING the month of January **LARGE REDUCTIONS** will be made of our stocks of **EXPERIMENTAL SETS** and **PARTS** at **COST** and under **COST PRICES**, all of which will carry our guarantee to give satisfaction.

A Small Transmitter with Tube Modulation complete with Valves and Batteries ready for use at £25 is just one of our many bargains.

Stocks limited. Send your Order as early as possible

NEWS IN BRIEF



Hospitals are installing Radio Sets.

British Post Office, from the coast of British Columbia to Australia, via Fanning Island, with such success that an extension of the scheme is likely to include China and South Africa. Commander Watson's plans have been conducted at isolated points along the coast.

Subscribers are asked to notify *Wireless Weekly* of any change of address. Communications should be addressed to "WIRELESS WEEKLY," 33 Regent Street City.

Valuable experiments in the production of short waves have recently been conducted in the Paris district. General Ferric, of the Eiffel Tower wireless station, in describing the results before the Academy of Science, said that it had been found possible to communicate at a distance of 1.4 miles with a two-metre wave length, and the intensity of the oscillations did not exceed 80 milliamperes. By increasing this intensity and by other devices, said the General, it would be possible considerably to increase the distance at which messages could be heard.

Two young Rhodes experimenters received the result of the 880 yards

swimming championship on Saturday, exactly 2 minutes after the race was over at the Domain Baths. Broadcasters Ltd., were the transmitters.

In view of the recent interest taken by the Minister for Education, Mr. Bruntnell, in the proposal to establish wireless in schools it is interesting to learn that instructions have been issued to the head masters of Worcestershire elementary schools to remove existing radio apparatus on their school premises. This step has been taken, it is stated, in consequence of damage done to property and danger arising to school children through climbing on roofs to inspect aerials. We think it would have sufficed in the circumstances if school masters exerted their authority to keep their pupils out of danger. The new measure appears rather drastic and will deprive scholars of a form of practical study which could only be to their advantage.

An interesting disclosure of trans-Pacific wireless tests during last summer appeared in the "Times" of November 29th.

It is understood, says the Vancouver correspondent of that newspaper, that exhaustive tests have been carried out by Commander E. C. Watson, representing the Pacific Cable Board, and the

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HOWELL'S

19 Barlow Street

Super-Heterodyne

Most experimenters have been much disappointed with the behaviour of the super-regenerative sets they have built or heard. They undoubtedly do produce undreamed-of amplification, but they are generally so noisy and the quality is so poor, that no great enthusiasm for them exists to-day. We do not believe this achievement of Armstrong's is in the same class with the two other schemes for which he was responsible—the straight regenerative set and the super-heterodyne.

When once asked by some of his amateur friends how he regarded the relative merits of his two "super" schemes the inventor expressed the idea that the super-heterodyne was the Rolls-Royce receiver, whereas the super-regenerative set might be likened to the flivver—a lot for your money. Now although we might prefer Rolls-Royce cars to the creations of Henry Ford, most of us are probably doomed to fly through life, if we don't walk. If all of us could be wealthy, or the cost of the best cars could be decreased 90 per cent., then Fords would be in danger of going out of style. It seems that the price of the "Rolls-

Royce receiver" is bound to fall. At least two factors are at work to cut down its cost and maintenance, and still another development, mentioned below, will make the super-heterodyne more popular, as this type of receiver will be necessary to get satisfactory results: we refer to short-wave transmission.

The super-heterodyne, it will be remembered, has one high-frequency circuit, tuned to the signal frequency, at the input end. Supplied also with this input circuit is the power from a local oscillator which combined with the signal frequency, gives a beat frequency of about 50,000 cycles. On this 50,000 cycle current is superimposed the voice frequency, which was originally on the signal frequency. This 50,000 cycle, voice-modulated current is then sent through about four amplifier tubes, which in the early receivers were resistance coupled, instead of transformer coupled, as might be expected. The 50,000 cycle current is then sent into a detector, from which voice frequency current comes out, to be increased perhaps with one stage of audio-frequency amplification. Evidently the scheme requires quite an outlay of tubes, generally from six to eight.

Now resistance coupling has two drawbacks, as compared to transformer coupling; it does not give much amplification per stage and it amplifies all frequencies very nearly alike. As we gradually learn more about high-frequency currents, we are able to design and build better radio apparatus, and this is true of 50,000 cycle transformers. By using transformers, instead of resistance, for coupling in the intermediate-frequency tubes, we do away with at least one of the required amplifier tubes and possibly two. Moreover, pulses and noises have much of their energy at other than 50,000 cycles, and as the transformer coupling may be quite selective, the amplification with transformers should have less interference than when resistance coupling is used.

Another factor which favours the development of the super-heterodyne is the unipotential cathode tube, mentioned above. The battery expense, which is high for the ordinary "super," is done away with altogether if such alternating current filament tubes are used. And if short-wave transmission comes into more general use, as seems quite likely, then still more does the super-heterodyne take on the appearance of the future universal favourite.

ANNOUNCEMENT

We are pleased to notify our customers, both Wholesale and Retail, that we are now ready to quote for the erection of aerial masts from 30ft. to 200ft. in either Wood or Iron, also for flags of any design.

E. H. BRETT & SONS LTD
LITTLE AVENUE, BALMAIN EAST

RADIOCULOUS

"More anti-birthday greetings!" exclaimed the author, as the postman dropped some bulky packages through the letter box on the front door.

"What do you mean by 'anti-birthday greetings,'" asked his friend, who was visiting him.

"Why," replied the author, sadly, they are many unhappy returns."

"Brighter London" (Eng.)

"You no longer use classical quotations in your speeches?"

"No," said Senator Sorghum. "People get so in the habit of talking about the cost of things that what my folks are interested in are market quotations."

"Washington Star" (U.S.A.)

"Why have you your pants back to front?"

"I'm going to a swell reception to-night and I'm getting the bulge out of the knees."

"Strix" (Sweden)

A newly-rich Jew, buying a piano, was concerned over the size of the instrument.

He impressed upon the salesman that it must be full-sized; the largest, in fact, that they manufactured.

"It's for a young and growing girl," he explained, "and I don't want to have to buy her another in a year or two."

"Royal" (Eng.)

Mary: You are an awful cissy. Your mother and father must have been married by a justice of the peace.

Tom: Well, judging by the noise in your house every night, your mother and father must have been married by the Secretary of War.

"Boston Transcript" (U.S.A.)

A native of Forfarshire was sentenced to a day's imprisonment in Perth Gaol, with the option of a fine of half a crown.

Knowing that he had business to transact in Perth, he decided to go to prison, but on arriving there he altered his mind, and paid the fine.

He then claimed his expenses for the return journey, 2/8 $\frac{1}{2}$, which the officials were obliged to pay, did a good day's business, and returned home with 2 $\frac{1}{2}$ d. in his pocket.

"Lloyd's Weekly" (Eng.)

"My husband," said a woman, "is the handiest man about the house I ever knew. He can do anything. Why, only the other day he took the cuckoo clock apart, cleaned it and put it together and now it runs beautifully."

"All right again, is it?" asked a bored friend.

"Oh, yes, all right; except, of course he did get the oo before the cuck when it tells the time."

"Le Rire" (France)

Is he any good ?



SENATOR HOKUM PINCH-HITS FOR THE BED-TIME STORY TELLER
TAKING FOR HIS SUBJECT "THE STABILIZATION OF WORLD POWER THROUGH THE MEDIUM OF AN INTERNATIONAL MONETARY CONFERENCE ON THE RATE OF EXCHANGE."

From New York "Life."

No Confirmation

Of Marconi's Sunset Line.

Marconi's early attempts to depict signal strength were, of course, very crude and unreliable. The only measuring instrument he had was the ear, and this is probably the most deceptive organ for making measurements that we have. In the laboratory we frequently test students to find out what, if any, conception of signal strength the average man has. It is remarkable how divergent the opinions are. We make a certain signal, of certain strength, and ask the student to record, in his memory, how strong the signal is. Then we increase the signal to perhaps five times its former strength and ask the question: How strong is this signal compared to the previous one? Man has never used his ear to estimate strengths of sounds as he has trained his eye to measure distances, so no wonder the opinions are so divergent. A given class will report strengths ranging from perhaps 25 per cent. stronger to 100 times as loud, for the signal actually five times

as loud. It is astonishing how infatigable in ability the ear is in this special task, to which it has never been trained.

It is no wonder, then, that Marconi's results, in which he showed a definite decrease in signal strength whenever the sunset line, or sunrise line, was between the communicating stations, were frequently questioned. During the last year or two, remarkable progress has been made in the technique of testing the strength of radio signals. At the Naval Research Laboratory, Doctor Austin has been making measurements of signal strengths from trans-Atlantic stations over long periods of time, and his results show definitely the great difference between winter and summer transmission of radio waves. When the recent successful attempt was made to telephone across the Atlantic, through the combined facilities of the Radio Corporation and the Western Electric Company, it was at once evident that here was a good opportunity to get much needed information on the variation of signal strength.

With accurate measuring apparatus,

signal strength measurements were made every hour over long periods of time. The great difference between day time and night time signals, with which every radio listener is acquainted, was measured day after day. The average of many readings gives a night time signal eighteen times as loud as the day time signal. The loud signals are obtained only when darkness exists over the whole path the waves have to travel; this is a small fraction of the day during the long summer days, as compared with about eight hours of good transmission in the winter months.

The results show a regular decrease in strength lasting about four hours, the time taken for the sunrise line to sweep across the Atlantic from east to west, and a corresponding rise in strength as the sunset line follows it, about 12 hours later. When the sunset or sunrise lines are between the two stations, however, there is no excessive drop in signal such as Marconi found. The decrease in strength seems to be directly proportional to the amount of daylight between the two stations. Throughout the day the signal strength is very uniform, and low,

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EXPERIMENTAL STOCK includes New System Telephones, Headsets, Magnavox Loud Speakers, Western Electric Co's. Apparatus, and all makes of high-class Apparatus used in experimental Receivers.

The attention of the trade is called to the fact that we are now prepared to receive enquiries for the supply of sets tuned to the various broadcast stations.

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lower than when the sunset or sunrise line is between the stations. For the wave lengths used in these tests, then Marconi's two dead periods do not exist. However, this is not conclusive evidence that Marconi was wrong, because these same tests showed no appreciable fading whereas every one of us is convinced that such a phenomenon does actually occur, and to a marked degree. It will be necessary to get much more data on radio wave transmission before we can begin to formulate the laws in accordance with which our radio signals travel.

The Invisible Band

Much wonder was aroused during the progress of the Lord Mayor's Show by the spectacle shown in the picture. Music was supplied by the Band of H.M. Irish Guards broadcasting from 2LO.

Photo: Topical in Wireless World.



An illustration of our

'REFLEX'

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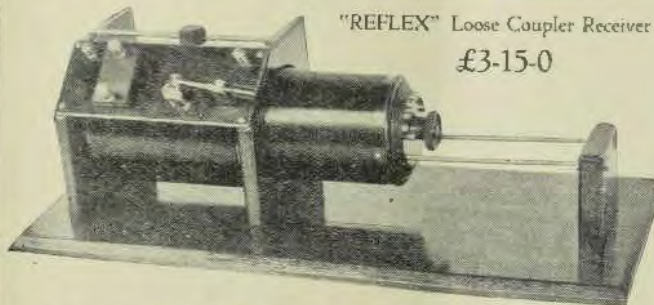
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"REFLEX" Loose Coupler Receiver

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Complete Set of Parts to make the above Set 36/6

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RADIO HOUSE
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Illawarra Radio Club

The 30th meeting was held on the 8th instant. Considering the holiday season, and the fact that it was an off night, the attendance was fair.

The main business of the evening was to receive the delegates' report on Radio Association matters. Mr. Hewett stated that at last meeting of the Association the whole of the evening was taken up in a discussion on some form of affiliation or co-operation between the Radio Association and the Wireless Institute. A suggestion had been made that the Radio Association should disband and the representatives on that Council should enter into some working arrangement under the auspices of the Wireless Institute as a Central Council for N.S.W., having the benefit of the Wireless Institute's organisation, on certain terms to be agreed upon. The suggestion had been productive of much argument and discussion, and the matter was to be put before a joint meeting of the Association and the Council of the Wireless Institute, to be called at an early date for the purpose. Mr. Hewett (as club delegate) desired the club's views on the proposal.

After discussion, it was decided that in the absence of more definite details of the scheme, it was impossible to decide how to act in the matter. A motion was accordingly carried, instructing the delegate to ask at next meeting of the association, that a concrete scheme be put forward which the various delegates could submit to their respective clubs for acceptance or rejection, or otherwise.

The night having been set aside for a display of members' apparatus, some brought along various articles of home-made construction, which were the subject of interest and discussion among those present.

The remainder of the evening was devoted to general discussion on club affairs, questions, buzzer practice, and working with the club's new three-valve receiver.

With the 39th meeting, held on the 15th instant, the club reverted to its

regular night. Following so close on the previous meeting, there was a total absence of business, and a freedom from formal procedure resulted in those present getting together in free and easy discussion on many matters of mutual interest.

The next meeting of the club will be held at the club room, 75 Montgomery Street, Kogarah, on Tuesday, 29th January, at 8 p.m. Buzzer practice from 7.30 to 8 o'clock. There will be a lecture on the programme, so all members are asked to attend, and a cordial invitation is also extended to any others interested to be present.

The Secretary, Mr. W. D. Graham, 44 Cameron Street, Rockdale, asks all experimenters or enthusiasts in this area who are not members of the club, to communicate with him with a view to joining up. All information required concerning the club will be gladly given on application.

Leichhardt and District Radio Society

The 63rd general meeting of members of the Leichhardt and District Radio Society was held at the Club Room, 176 Johnson Street, Annandale, on Tuesday, January 15th, when a lecture entitled "Wave Motion, and its Application to Radio-Telegraphy and Radio-Telephony," was delivered by Mr. H. Whitworth. This very important subject was excellently dealt with, and at the conclusion of the meeting, a vote of thanks by acclamation was accorded the lecturer.

Later, it was announced that the following syllabus of lectures had been arranged by the Council:—

Feb. 12: Aerials and Earth Connections, by Mr. F. Thompson.

Feb. 26: Tuning Elements, by Mr. F. Lett.

March 10: Crystal Detectors and Their Action, by Mr. W. J. Zeck.

March 24: Telephones, Types and Action, by Mr. F. Thompson.

April 8: Crystal Circuits and Their Construction, by Mr. F. Roscoe.

April 22: Valves, by Mr. F. Lett.

May 12: Batteries, by Mr. W. J. Zeck.

May 26: Radio Frequency Amplification, by Mr. F. Lett.

June 10: Audio Frequency Amplification, by Mr. F. Thompson.

June 24: Valve Circuits, by Mr. F. Roscoe.

All inquiries relative to the activities of the Society should be addressed to the Hon. Secretary, Mr. W. J. Zeck, 145 Booth Street, Annandale.

Newcastle District Radio Club

The usual fortnightly meeting of the above Club was held on January 16, Mr. Seward, the President, occupying the chair.

The Secretary reported that Mr. Armstrong, Assistant Radio Inspector, would visit Newcastle on Wednesday, the 23rd inst., to confer with the Club. After the discussion, it was decided to hold a special meeting on that date as there are several very important matters to be discussed. All members are asked to be present.

Reports on the Club's radiophone tests were read (see separate report) and a hearty vote of congratulation was accorded Mr. L. R. Miller (the Technical Director) and Mr. L. T. Swain (the Secretary) for their accomplishments with the Club's transmitter.

Four new members were elected.

The President then called upon Mr. Allen, A.M.I.C.E. to deliver his address on "Crystal Receivers." The lecturer pointed out to his audience that too little attention was paid to crystals these days, and showed that there was still plenty of room for research in that direction. He exhibited several variometer receivers of his own construction on which he has secured some remarkable results.

Prospective members are requested to write to the Secretary, 49 Everton St., Hamilton.

Report on Radiophone Tests.

Previous to Thursday, 10th January, the N.D.R. Club has not been heard on telephony since the advent of the "200 metre" regulation.

About the end of September, an attempt was made to transmit on 400 metres. The set was very crude, an old loose coupler being used for the transmitting inductances and for high voltage supply, 240v. A.C. passed through a four jar chemical rectifier. The circuit used was the ordinary two-coil receiving circuit (now taboo) with grid modulation. No earth was used, an earth being obtained through the neutral of the A.C. supply. Using 6 watts input, a radiation of 0.12 amp. was obtained and good reports received up to a distance of 15 miles.

When the "200 metre" regulations were brought in, the Club's aerial was altered to a four wire cage, flat-top 80 ft. long, 50ft. high at the lead-in end and 30ft. high at the free end. A two-wire counterpoise was also erected and the water pipe earth abandoned.

A new transmitting inductance was constructed and the transmitter connected up as per the "Hartley" circuit. Using 400v. A.C. straight on to the plate, a radiation of 0.6 amp. was obtained from an input of 15 watts. It was on this set that communication was first established with Mr. Burman (President) and Mr. Geo. Challenger (Secretary) of the Western Suburbs Club, Auburn. This was in October.

An attempt was then made to obtain high voltage D.C. through chemical rectifiers. After burning out two transformers, it was decided to purchase Kenetrons. These were bought and a new transformer wound and completed on 9th January. On the previous Sunday, 6th January (in anticipation of this) the transmitter was tuned up, using the "British Aircraft" or reversed feed-back circuit with 400v. A.C. on the plate. An extra wire was also added to the counterpoise. A radiation of 0.7 amp. was obtained from 15 watts input. At 8.45 p.m. on Thursday, 10th January (after a few hours' hard work connecting up and testing) the kenetrons and new transformer were brought into use. Contrary to expectations, the radiation

dropped back to 0.5 amp (15 watts input) when the D.C. was supplied. Before the transmitter had been in operation half an hour, the radiation was increased to 1.0 amp. on slightly less input. A continuous transmission of music was made until 10 p.m. The following are extracts from some of the reports received:

Mr. Silverthorne (local amateur) music 300ft. from loud speaker, using 1 H.F. detector and 1 audio.

Mr. Conolly (Darlington Point near Hay): "I am using two radiotron W. D. 11 dry cell valves, detector and audio amplifier.

Mr. E. L. Norris (Toowoomba, Queensland): "... The modulation was excellent. . . the C.W. notes were very steady. . . I am using a four valve neutrodyne of my own construction."

Mr. R. Burton (Brisbane, Queensland): "... Your station was heard . . . the modulation appeared to be pretty good at times. . . receiver consists of standard 3 coil circuit with 2 stages of audio. . . You were first picked up on detector alone."

Mr. Burman (Auburn N.S.W.): "... Came through with remarkable

strength and clarity; I am using one stage of radio and detector. . . using an aerial barely thirty feet high, and about forty feet long."

Mr. Challenger (Auburn): "C.W. came in beautifully. . . very strong . . . your music was not so strong."

Considering this was the first test, it speaks very highly for Mr. Filer (who constructed the transformers) and Mr. Swain who connected up and operated the transmitter.

From the foregoing it will be seen that the Club has the distinction of being the first country club to communicate direct with a metropolitan club by radiophone, and so far as long distance transmission is concerned, I think that the old Burwood Club (2IX) is the only society we have to beat. The transmitter is already working so efficiently that it will radiate with ten volts as the high tension supply.

The Club can be heard testing on Tuesday and Thursday nights at 7.15 p.m. and Sunday mornings at 11 a.m. Reports from experimenters hearing these tests would be appreciated. Wavelength, 230 metres, power 10 watts, radiation 1 amp.

Wiles' Wonderful Wireless

Complete Stocks of all parts for Amateur Construction. Being direct importers, we are continually adding many new and interesting lines to our stocks. Members of Broadcasters Sydney Ltd., and Agents for Farmer's Broadcasting Service.

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Wireless Institute

SOUTH AUSTRALIAN DIVISION.

The monthly general meeting of the South Australian Division of the Wireless Institute of Australia, was held in the Prince of Wales Lecture Theatre, at the Adelaide University, on Wednesday last. There was a large attendance, over which Mr. R. B. Caldwell presided.

The minutes of the previous meeting were read and confirmed. Six new members were enrolled, and two applications for admission were received.

A letter was received from Mr. J. Malone, Chief Manager Telegraphs and Wireless, stating that he would arrive in Adelaide the following morn-

ing, leaving again on Saturday. A letter received by the Secretary from Messrs. Farmer's, Ltd., Sydney, stating that they would be pleased to receive further reports on their broadcast transmission, was read.

Mr. E. G. Gunner, a recent arrival from home-tar, gave a very interesting lecture on radio conditions in England. He outlined the broadcasting scheme as adopted there, and explained how broadcasting had been brought about by the experimenter. He also gave some interesting information regarding the phenomenon known as fading, as experienced in certain parts of England. Dead spots existed in the old country, he said, where wireless signals could not be intercepted even by means of great amplification, while a single valve receiver a mile away may receive anything going.

The amateur situation was explained at some length by Mr. Gunner, who, at the close of his lecture, was called upon to answer quite a number of questions.

Mr. H. I. Austin gave a demonstration of honey-comb coil winding, by means of a specially constructed former of ample proportions which enabled all present to follow him in his explanation of the manner of winding.

A hearty vote of thanks to the speakers brought to a close a very interesting and instructive evening.

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Staff Changes

Coastal Radio Service.

Mr. S. Trim, officer in charge, Perth Radio Station, has been transferred to the engineering department, Amalgamated Wireless Ltd., Sydney.

Mr. M. G. Pope, officer in charge, Adelaide Radio Station has been transferred to Perth Radio as officer in charge.

Mr. H. Selfe, radiotelegraphist, Broome Radio, has been transferred to Perth Radio on completion of his term of tropical service.

Mr. J. F. Christie, radiotelegraphist, Geraldton Radio, has been transferred to Broome Radio.

Mr. H. E. Oates has been appointed radiotelegraphist at Adelaide Radio Station.

Mr. R. Simons, radiotelegraphist, has returned to his headquarters, Melbourne Radio, after relief duties at Hobart.

Mr. J. H. Chesterfield, radiotelegraphist, Adelaide Radio Station, has been transferred to the broadcasting department and is stationed at Adelaide.

Mr. A. R. Finch, rigger, has returned

to his headquarters, Melbourne, on completion of overhaul of masts and aerials at the Northern Stations.

An enquirer on the telephone recently asked the authorities of one of the New York Broadcasting stations if the Wedding March could be played by the station orchestra on the following day, when he was to be married. "Sorry," was the reply, "but we haven't an orchestra to-morrow. Why not postpone the marriage a day, and we'll see what can be done for you?" This suggestion was agreed to, and the Wedding March was duly broadcast as desired, two days later.

Heard California

We are pleased to advise you, writes the Burgin Electric Co., that our Bega agents, that is Bega Radio Supplies, have been very successful in picking up the recent broadcasting of the "Southern Maid." They also hear every day, Farmer's service, on three valves, during which time they come through fine and as clear as a bell. At night time the static is the only troublesome feature. This reception was carried out

on a Burginphone Experimental Receiving Set.

We are also advised that last Sunday night they heard Oakland, California, broadcasting speech and music, loud, between 8.30 and 10.30 p.m.; three persons were listening-in to this, and verify same as correct. This receiver was one made from Burginphone parts.

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David Jones' have been fortunate in securing the services of Mr. F. Basil Cooke, F.R.A.S., and all interested in Wireless or Broadcasting should take advantage of his expert advice and knowledge before purchasing a Broadcasting or an Experimental Set. Advice will be freely given on any subject relative to Wireless.

Country Customers, by taking advantage of our Mail Order Department, are given equal buying facilities to the City client. The following, are a few articles selected from our comprehensive range of radio accessories, in order to show the combination of quality and moderation of price that characterises goods stocked by David Jones'.

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- "Sterling" Voltmeter, Price, each 17/6
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Mr. J. Malone

ENTERTAINED IN ADELAIDE.

On the occasion of his first visit to Adelaide, Mr. J. Malone, Chief Manager of Telegraphs and Wireless, was entertained by the Radio Association of South Australia, at a luncheon, held in the Grand Central Hotel, on Friday. Among those present were: Mr. Harrington, Radio Inspector for South Australia; Mr. Scott, Inspector for Western Australia; Mr. J. F. Fitzmaurice, State Engineer of the Postmaster-General's Department; Mr. G. A. Miller Randle, Vice-President of the Radio Association; Mr. R. B. Caldwell, President of the South Australian Division of the Wireless Institute; Mr. H. L. Austin, Vice-President, and Mr. C. E. Ames, Secretary of the Wireless Institute.

Mr. Randle, who welcomed Mr. Malone, expressed great admiration of his efforts on behalf of wireless generally, and assured him of the fullest co-operation with his department by all present in the administration of the wireless regulations.

Mr. Caldwell, on behalf of the Wireless Institute, thanked the guest for all he had done for experimenters of South Australia.

Mr. Malone, in reply, thanked the association for its cordial welcome, and outlined many features of the regulations, explaining problems of the present and future.

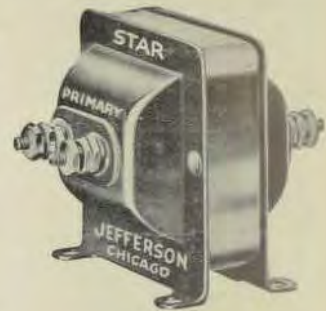
The experimenters of the future, he said, must be genuine experimenters, as broadcasting companies must receive revenue from holders of broadcast receiving licenses. It was necessary, therefore, that experimental licenses should not be secured for listening to the broadcasting companies' transmission.

No restrictions would be placed in the way of those persons who desired to become experimenters. Provided they were genuine and capable they would be given every consideration.

Every facility would be given to link up the isolated parts of the interior by wireless, but it was foolish to imagine that this could be done for a few pounds.

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