

Friday, June 13th, 1921.

WIRELESS WEEKLY



United Coils

Reasonable Prices
at
All Dealers

A Genuine Honeycomb Coil

True Inductance for all Wave Lengths

Does YOUR Set contain ?

United Transformers

United Condensers

Signal Sockets

Cutler Hammer Rheostats

Quick Heat Grid Leaks.

Signal Fixed Condensers

Applause Cards furnished Dealers and Clubs without charge.

United Distributing Coys., (N.S.W.) Ltd.

WHOLESALE ONLY

— Manufacturers of —

RADIOVOX SETS

A Few Territories open for Agents.

28 CLARENCE ST., SYDNEY and at 592 BOURKE ST., MELBOURNE

See page No. 2 Re Home Assembly Sets



Official Organ of the Australasian Radio Relay League

Vol. 4.

Friday, June 13th, 1924.

No. 9

Why the Delay?

At the invitation of the Postmaster-General, a Conference was called in Sydney to outline a revised broadcasting scheme. The representatives, some of whom travelled for several days to attend, deliberated for five days, and finally transmitted a verbatim report to the Postmaster-General.

The scheme recommended by the Conference was one that was considered to be basically sound in every respect.

It allowed for competitive broadcasting, thus assuring the public of high grade services, and by setting aside a proportion of the revenue to be allotted after a period to the company which conducted the best service, made provision against possible amalgamation of interests.

The Postmaster-General has had two months in which to consider this scheme and others which

have been put to him, and yet there seems nothing at the present time to indicate when the public are to be advised what is to be offered them in the way of broadcasting. The Postmaster-General is dumb; his hands tied by the conflicting influences which are at work each pulling the strings in order to attain its own particular objective.

Meanwhile, dozens of small traders are literally standing on the brink of ruin, and the whole industry is at a standstill. Even those anxious to get experimental licenses are held up, while the Chief Manager of Wireless presumably awaits the new regulations.

As the public must pay for whatever form of broadcasting supersedes that now in force, surely it is high time the Postmaster-General made his announcement!

Roster for Week ending 18th June, 1924

	7.30 to 8.0	8.0 to 8.30	8.30 to 9.0	9 to 9.30	9.30 to 10	10 to 10.30
Thur, June 12	2 RA 2 GR	2 IJ 2 JM	2 YI	2 UW	2 YG 2 VM	2 ZG
Friday,	13 2 IJ 2 GR	"	"	2 ZN	" 2 ZZ	"
Saturday,	14 2 RA 2 GR	2 IJ	"	"	"	"
Sunday,	15 2 RA 2 GR	"	"	"	"	"
Mon.,	16 2 RA 2 GR	2 IJ	"	"	"	"
Tues.,	17 2 IJ	"	"	"	"	"
Wednes.,	18 2 RA 2 GR	2 IJ	"	"	"	"

United Distributing Coy. Announces New Big Seller

"Signal" Home Assembly Set.

To meet the demands for an inexpensive, yet efficient and simply operated Single Valve Receiver, we are offering the "Signal" Home Assembly Set, containing all parts complete, except, of course, Batteries, Phones, Valves and Aerial.

The picture and diagram of this set is shown, and also an itemised list of contents and instructions for construction and operating. The design has been so simplified that the set can be easily built and operated by any beginner. The set is built for a U.V. 199 or C299 dry cell tube, but by changing the socket to a standard socket or English socket, it can be operated with a wet battery.

The cabinet is genuine oak, substantially built of $\frac{3}{4}$ in. material, morticed, and has mission finish. All the parts are standard, high grade and thoroughly reliable, no cheap material being used. The panel is of genuine bakel- engraved and drilled ready for mounting parts.

Several hundreds of these sets were sold the first week that the sample was shown, and every dealer in Australia should have one of these sets on his counter.

Many dealers have bought one assembled set for demonstration and several unassembled sets for sale.

Diagrams and circulars are furnished without charge.

Next week the United Company are following this popular set with two and three valve Home Assembly sets. Those interested should get into touch with the United Company right away.

CONSTRUCTION.

Mount all apparatus on the back of the panel as shown in the diagram and in the positions as shown. "P" is the 23 plate tuning condenser, "S" the 11 plate condenser with sub-panel assembly and "R" the signal rheostat. This latter is to be mounted with the connecting screws to the bottom as shown for convenience of wiring. The coil plug is mounted on the front of the panel by means of the two screws shown.

For the sake of clearness of the wiring diagram, the jack and the terminal board are shown out of their correct positions, the jack being fastened in the hole in the lower left hand corner, and the terminal board to the brackets in the condensers. Wiring is

done by means of the tinned insulated wire supplied, the point to be connected being indicated by the heavy black lines of the diagram.

For neatness all leads should be kept straight and all bends made at right angles. Wherever possible, solder all connections but when so doing do not use acid or soldering paste containing acid such as a flux, as this invariably causes corrosion and consequent trouble.

The circuit as shown is non-regenerative. To obtain regeneration, the terminal marked "P" of the valve socket is connected to the aerial side of the coil plug as shown by the dotted line.

There is ample room for battery.

OPERATION.

The 40B volt battery is connected with the terminals indicated. The $4\frac{1}{2}$ volt A dry cell battery (using 299 tube) is connected with the A terminals.

The aerial is connected with the terminal marked "Ant." and the earth to the terminal marked "Gnd."

Place valve in socket, insert a plug with phones attached into the jack and turn on rheostat ("R").

Place mounted coils with the wave length desired in the front of the panel and the set is ready for tuning.

To tune in, revolve the two dials marked "Tuner" and "Amplifier" very slowly into various combinations until a slight click or whistle is heard, which can then be made weaker or louder.

Familiarity with the set will obtain excellent results.

CONTENTS.

The following contents comprise all the parts necessary for the construction of the Signal Valve Receiver, which can be made either regenerative or non-regenerative by the alteration of a single lead. The set can be easily built and operated without technical experience.

Oak cabinet, mission finish, outside dimensions, 14 in. x 8 in. x 7 in.

CONTAINS.

Bakelite panel, engraved, bored ready for mounting.

Two dials.

23 plate United variable condenser, .0005.

11 plate United variable condenser, .00025.

United 50 turn coil mounted (for low wave lengths).

United 150 turn coil mounted (for high wave lengths).

Panel plug.

Signal rheostat.

Signal socket for U.V. 199 or C299 valve.

Quickheat leak and mountings.

Eight engraved binding posts.

Sub-mounting binding posts.

Jack.

Eight pieces square bus wire, 10 in. long.

TRUMPH FOR UNITED DISTRIBUTING COMPANY.

At last the impossible has been accomplished.

Up till now, Goulburn has been regarded as a "dead district," having resisted the efforts of all visiting radio experts from various to secure good results.

During the past week extensive tests were carried out at Goulburn by the radio engineer from United Distributing Co., Sydney.

Using the company's latest five valve receiver (2RF, D, 2AF), which incidentally is very easy to tune, the following results were secured:

The set was tested in three different locations in order to insure that results could not be classed as "treake."

The first location was at Messrs. Turner and Sons, the Goulburn representatives of the company.

Here the results were very good from a volume point of view, but owing to a very high voltage a.c. power line close to the aerial, music and speech were rather distorted and mutilated. The aerial in this case consisted of a single wire about ten feet above the iron roof, and about 120 feet long, inclusive of lead-in.

The next location was at a house on the outskirts of the town.

On an aerial only 25 feet high, and about 110 feet long, including down lead, with an earth consisting of a petrol tin sunk about 2 or 3 inches into the loose soil, 2FC came in strongly, being easily audible 400 feet from the small Brown's loud speaker. Every word of the announcer could be followed 120 feet away. (This was in daylight.)

On this location only twenty-five minutes elapsed between the arrival of the set and aerial equipment, and the reception of signals.

Continued on page 9 col. 3

Marco Rheostats, 30ohms, 6/8; Jacks, 2/6 and 3/6; Plugs, 2/8 and 3/4 each. Colville-Moore Ltd., 10 Rowe St.,

Friday, June 13th, 1924.

WIRELESS WEEKLY

3



“SIGNAL”

Home Assembly Set

Make It Yourself

THE SIGNAL HOME ASSEMBLY SET is designed to meet the demand for a complete set ready to be assembled. It is inexpensive, simply constructed, and yet an efficient single valve receiver. Each set contains all the parts necessary to construct the set proper. All contained in an attractive oak cabinet 14 in. long, mission finish, with engraved Bakelite panel all bored ready for mounting the parts.

Values that amaze the trade are offered in the SIGNAL HOME ASSEMBLY SET. Every part is an expert selection.

INSTRUCTIONS and a clear diagram make it very easy to assemble this one valve set. You can't go wrong.

BOYS, YOUNG and OLD, here you can get all the thrill and satisfaction of MAKING YOUR OWN, and SAVE HALF THE COST

ASK YOUR DEALER FOR “SIGNAL”
and if he has not yet stocked it write us

United Distributors Limited

(WHOLESALE ONLY)

28 Clarence-st., Sydney

592 Bourke-st., Melbourne

Reflex Circuit

BY THE LITTLE AMERICAN.

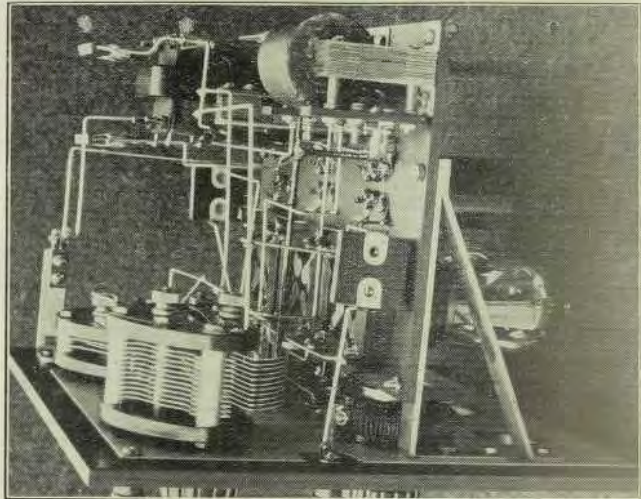
Reflex receivers are of the most practical that can be built. The main advantage of a reflex receiver is that it permits high amplification with a minimum number of vacuum tubes. In this circuit the tube acts as both a radio frequency and an audio frequency, thus making an economical arrangement.

Very few amateurs attempt to make this circuit, especially using more than one valve. The reason seems to be that good results have not been obtained perhaps on account of not being properly balanced or being too broad in tuning.

This circuit is by no means new. It was developed by the French almost a decade ago. Vacuum tubes and coupling transformers for amplification were unreliable in those days, and were known only to engineers. It was the recent war that put this circuit on a practical basis.

Perhaps an explanation of the action of the circuit will be helpful.

As you know, there are two kinds of amplification, radio-frequency in which the signal received is amplified before it is rectified or detected; and audio-frequency, in which the signal is amplified after it is rectified.



audio-frequency amplifier receiver, a local signal is four times as loud as a distant signal. Then, in the first

local stations do not seem to be much louder on a radio-frequency set than on the ordinary set, while distant stations are heard almost as loud as local ones.

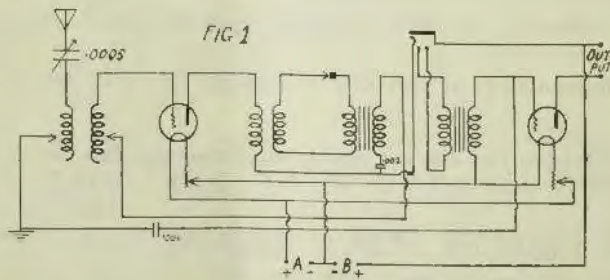
Radio-frequency alone does not have the strength usually to operate a loud speaker. To overcome this, one step of audio-frequency and sometimes two steps are used. This necessitates the use of four or five tubes, which involves an expense that places such a set out of reach of the average enthusiast.

Here is where the reflex circuit comes to the rescue.

Last week I described the Harkness reflex. Because of its simplicity in operation and construction, it is one of the least expensive reflexes to build. I also show here an added step of audio-frequency that may be installed at any time, because many amateurs like to build up one tube at a time.

The circuits illustrated here are variations of reflex circuits that the experimenter would no doubt like to try, using the standard radio-frequency transformers.

Fig. 1 is known as the Erla reflex. The tuning unit is wound on a 3 inch



The output of an audio-frequency amplifier is approximately proportional to the square of the voltage impressed on the grid of the tube. It is easily seen that strong local signals would, therefore, drown out weaker distant signals. Consider that in the detector circuit of a conventional two stage,

stage it may be sixteen times as loud, and in the second stage may be two hundred times as loud.

The reverse is true in radio-frequency amplification. The louder the signal the more tubes will tend to paralyse and therefore fail to amplify. A weak signal is greatly amplified; that is why

"MELLO" Phones. 25, Set, 4,000 ohms, ALL BRITISH MANUFACTURE —

COL-MO, 10 Rowe Street, Sydney.

Wireless Supplies Ltd.

The Home of the "VOLMAX" Guaranteed Range
Broadcast Receiving Sets

MORE VALUES FOR THE KEEN EXPERIMENTER

ACCUMULATORS: Genuine Exide, the new battery you have read about, 20 amp. hour capacity, in heavy glass containers, ideal for low consumption, valves will last six months on one charge when used on valve UV199. Will deliver up to 1 amp. Price, 2 volts, 12/6; 4 volts, 24/-; 6 volts, 35/-.

AERIAL INSULATORS: White porcelain, reels, 1 1/2 in. x 1 in., 3d. each; 2/10 doz.

AERIAL WIRE: Standard, 3/20 H.D. Copper, per 100ft., 2/9.

LEAD-IN TUBES: White porcelain, bent, 2 1/2 in., 4d. each; 5 in., 9d. each. White Porcelain, straight, 6 1/2 in., 9d. each; 8 1/2 in., 1/- each.

VARIABLE CONDENSERS: "Advance" unassembled parts in box, 11 plate, .0003 m.f., 6/9; 23 plate, .0005 m.f., 19/6; 43 plate, .001 m.f., 13/-. "Ausrad," assembled complete, with screws and spacers for fixing to panel, 17 plate, .0006 m.f., 12/6; 35 plate, .001 m.f., 18/6. "Gibblan," considered to be the most high-class condensers made, brown, moulded bakelite ends, low minimum capacity, straight line curve, 17 plate, .0003 m.f., 18/6; 23 plate, .0005 m.f., 22/6; 43 plate, .001 m.f., 28/6. The above prices for variable condensers do not include dials.

DIALS: Highly finished, black bakelite or condenser dials, 3 in., for condensers, variometers, etc., 2/3, 2/6, 4/9, 5/- each; 2 in., for rheostats or potentiometers, 1/9, 2/3, 4/6 each.

DETECTORS: "Fortevox" Detector Parts, complete on card, per set, 2/6. "Fortevox" Detector, mounted on base, 3/6. "Volmax," Nickel plated Detector Arm, ball joint, 3/-.

CRYSTAL SETS: Double slide crystal receivers, complete with detector and 'phone condensers, tune, up to 1200 metres, finished black ebony, 26/6. "National Airphones" (they put the joy in radio), so simple a child can use them, guaranteed to receive music up to 25 miles, small in size, large in results; come and hear the music on one to day. Price, 52/6.

HEADSETS: Murdock, 2000 ohms, 27/6. Geophone, 6000 ohms, 45/-. Western Electric, 8000 ohms, 45/-.

VALVES: Just arrived, the Mullard Weenvalve, no accumulator required, takes less than .25 amp. on one dry cell, fitted with standard English base, price, 37/6. De Forest DVI Dull Emitter Valve, .06 amp., on two dry cells, price 35/-.

NEUTRODYNE PARTS: Set of 3 wound neutroformers, 3 variable condensers, .0005 m.f., and 2 neutrodials, £3/17/6 set.

"B" BATTERIES: 45 volt "Dutho" accumulator "B" batteries, complete with bottle of electrolyte and fillers, price 50/-.

AUDIO TRANSFORMERS: A few patent audioformers left, at 21/-.

SWITCHES: Radial switches, for loose couplers, etc., 1/6 each.

STUDS: Our standard N.P. contact studs, per doz., 1/- Extra nuts, per doz., 4d.

LOOSE COUPLERS: Beautifully made with 2 N.P. sliders, wave length range 1200 metres, price 65/-.

VARIOCOUPLER PARTS: Including wooden rotor, solid impregnated tube and spindle, small 6/6; large, 8/6.

VARIOCOUPLER SPINDLES: Complete spindle assemblers, 1/6.

TRIMM LOUD SPEAKER UNITS: Special large diaphragm, adjustable, will deliver same volume as Magnavox. The same high-class construction as Trimm 'phones. Price, 75/-.

SINGLE VALVE RECEIVER: The National Monodyne Set, complete with valve, 'phones, aerial gear and all accessories, no battery charging required. A most efficient receiver. This set is guaranteed. Only a few left at £7/5/-.

We pay carriage on all goods except batteries. Orders received without cash will be forwarded per value payable post.

WIRELESS SUPPLIES LTD.

21 ROYAL ARCADE, SYDNEY

PHONE M 3378

(Continued from page 5)

tube, having two inch coupling between primary and secondary. The primary consists of 65 turns tapped at 20, 15, 15, 15, and the secondary 80 turns, tapped at 20, 15, 15, 15 and 15. Both primary and secondary are tapped from the centre out. Attach aerial to inside of primary and grid to inside of secondary. These turns will cover a range of 200 to 600 metres. This range may easily be increased by addition of turns to both primary and secondary, and changing of A.F. transformer to high wave length.

The addition of one step audio-frequency to this set makes a very excellent set for distant and local reception.

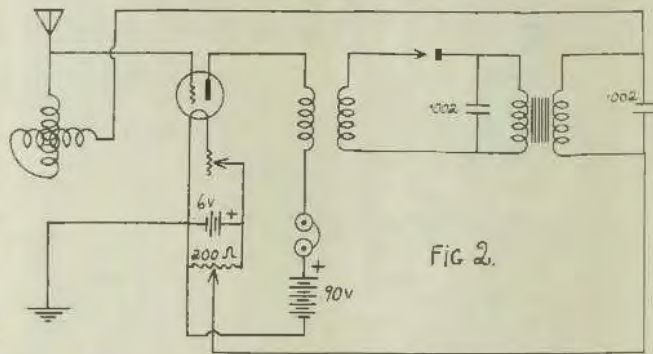
Fig. 2 represents what is known as the Amrad reflex, using a variometer as the tuning unit. The potentiometer is also very necessary in this circuit to get proper stabilisation. This is a simple set to construct, and very good results have been obtained.

Fig. 3 represents a very popular three tube reflex, using a loop aerial. Great care should be taken in constructing this set, as it is extremely hard to bal-

ance. It is a very good idea to wind this set, after assembly, without inserting various condenser capacities. Then try various condensers in places indicated until proper results are obtained. Short leads are absolutely necessary.

This set, when properly assembled, has been able to receive distant music at loud speaker strength. It is very

easy to operate, and is very clear and distortionless by using a good crystal detector. I would not advise other than experienced set builders to attempt building this set. A very good idea of how to assemble the component may be had from the photograph. Next week I will describe my experience with the Cockaday four circuit tuner.



“ Burginphones ” — Again Successful !

Bourke Tests Prove Conclusively
—That They Are Efficient.—

In three different localities of New South Wales, South, West and North, the “BURGINPHONE” Model 9, 5 Valve Receiver has definitely and in the presence of witnesses picked up K. G. O. California Broadcasting Station.

These sets are designed and manufactured in our Sydney factory.

Send for illustrated catalogue and price list.

BURGIN ELECTRIC CO.

1st. Floor, 391-3 George St., Sydney

Telephone : M 3069

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SERVICE
AND
QUALITY

SERVICE
AND
QUALITY

MAJOR ARMSTRONG.

Radio as we know it to-day is the work of thousands of men, some of them scientists interested in knowledge as an end in itself; others practical inventors whose goal is a product that will sell. The inventions which have contributed to make modern radio possible are many.

It is conceded by all who have contributed this mass of good work to radio whether it be large or small, that the contributions of Major Armstrong are the most important and that we owe much to this gentleman for making possible radio as it is to-day.

The incidents of Major Armstrong's struggle for recognition in radio comprise one of the most remarkable chapters of a life story crowded with romance. He began experimenting with radio as an amateur, when he was fifteen years old. It was during that period of his early work that he discovered and diagramed what is known as "the Armstrong feed-back circuit," without which long distance telephone communication and broadcasting, as it now exists, would be impossible.

Litigation over this invention lasted several years, but ended in complete victory for Major Armstrong.

The legal battle ensued while the young inventor was in the service of

his country during the world war. Major Armstrong was graduated from Columbia University in 1913. He holds a degree of electrical engineer. His fame as an investigator was recently enhanced to world-wide eminence by his discovery of the Armstrong super-regenerative circuit.

He is only thirty-three years old. When the world war broke out he was studying for a master's degree at Columbia University, and was experimenting with wireless with Professor M. Puppin in the Hartley Research Laboratory.

Armstrong was not an especially

brilliant student; in fact in many of his courses he did rather poorly. The characteristics of alternating current machinery in general did not prove enticing, not because he had a hobby—and a vision. He was experimenting at his home with wireless apparatus and trying to find out how the three electrode audion of De Forest worked. De Forest himself confessed in public that the action was too mysterious for him to explain, and then Armstrong decided it was up to him to explain it for him, which he did very shortly.

(Continued page 9, Col. 3)

When buying your Loose Coupler parts see that they bear the brand of

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Wood Ends, Baseboards, Slide Rests, Sliders, Crystal Cups, Detectors, Rotors, Stators, Formas, Variocoupler Sets, etc.

GROSE & DANIELL
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Dealers write for Price List.

COLUMBIA B. BATTERY
for 28/-

Famous Columbia B. Battery, excellent for country use, and is guaranteed for six months. Now offered at low price of 28/-.

Igranic Audio Transformers 35/-

Specially built for long distance reception. Price 35/-

Igranic Coils, Set ranging from 25 to 200 Turns . . £4/19/6

Cutler Hammer Rheostat

Suitable for very fine tuning. An essential for long distance D.X. work 10/6

"Fada" 5 ohm Rheo 4/-

Well known "Fada" brand Rheostat. Now exceptionally low priced 4/-

DAVID JONES'

Radio Dept., 252 York Street, Sydney

How to make a "B" Battery

By Insulator.

Have you ever been very anxious to listen-in some night to something special, only to find that your set refuses to function? What happens then? You go over your set carefully, testing every connection. The valve is examined to see that it is alright; in fact, after almost pulling your set to pieces and finding everything O.K. you locate the trouble in your "B" battery. These articles have a habit of running down when you want them most. At least, that was what I noticed more than once, and in order to overcome this difficulty I had occasionally to borrow one from another amateur not far away. One night he jibbed—but however, that is a different story.

This little article will be devoted to the description and construction of a splendid 48 volt High Tension Unit which will not refuse to function provided a little care and attention is given to it occasionally.

Procure 24 test tubes 6 inches by 1 inch, 1 sheet of 22 gauge lead 18 inches, by 12 inches, and a few old 1/2 plate negatives.

These form the components for the cells which are arranged in a box to support them

Figure 1 shows the lay out of the complete battery in the box. It will be obvious that the tubes will not stand erect unless they are supported. I will explain how this is done as I go along.

First of all make the box to the following measurements:—

Two sides—8 1/4 x 7 x 1/4 in.

Two ends—5 1/2 x 7 x 1/4 in.

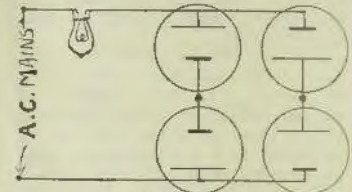
Bottom—7 3/4 x 5 1/4 x 1/2 in.

Lid—7 3/4 x 5 1/4 x 1/4 in.

Shellac or polish these pieces and build up all excepting the lid. Ordinary wood screws will suffice to keep the box together but you aristocrats of the wood trade can dovetail the joints if you so desire. Next obtain two pieces of 3 ply wood, 7 3/4 inches by 5 3/4 inches and clamp them together. This having been done mark them as shown by Fig. 2. This is only a section of the whole but it suffices to give the working dimensions. Holes 1 inch in diameter are drilled as shown. Inside the box on each of the 8 1/2 inch sides and 1 inch from the bottom tack a piece of wood 7 3/4 x 1/4 x 1/4 in., five inches from the bottom and on the same sides tack two more pieces of a similar size. Fit the 3 ply "trays," on these supports. Good: Do you see the idea? Yes, you're right, the next thing to do is to slide the test tubes on these receptacles. They fit nicely don't they?

Turn your attention now to the lead. Cut 22 strips, 12 in. by 3/4 in., 4 strips 7 in. by 3/4 in.

Borrow the rolling pin and roll them out perfectly flat. Pierce a hole in



the 4-7 inch strips 1/2 in from one end. These are to take the terminals. Which you will notice in the diagram are taken through the side of the box. Bend the leads as suggested by Fig. 3, and insert the tubes. This is quite simple. Fig. 1 shows how to treat the two end pieces.

Purchase 3 pints of 1300 Sulphuric Acid from your battery charging station and pour into the test tubes, filling them to within 1/2 in. of the top. Clean the film off the 1/2 plate negatives and cut 24 strips 5 1/2 x 1/2 in. for separators. These are shown in Fig 1 right in the middle of the test tubes. By bringing across the two inner terminals on the box you have completed the B. Battery.

Now we come to the rectifier for charging this battery. Obtain 4 pickle jars and fill them to within 2 ins. of the top with a saturated solution of borax or carbonate of soda. Get

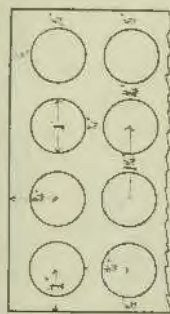


FIG 2

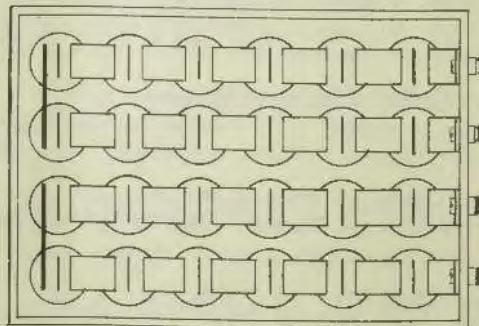


FIG 1

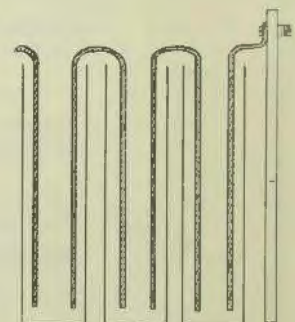


FIG 3.

4 strips of aluminium 5 inches long by 1 inch wide and also cut 4 strips of lead 5 inches long by 1 1/2 in. or 2 inches thick.

Pay attention now to Fig 4, you will notice the lead plate as the narrow black strip and the aluminium as the wide strip. Notice again how the two inside leads and the two inside aluminiums are joined together while the outside aluminium and leads are connected. These leads and aluminiums are supported through slots in a piece of 3 ply, the size of which is regulated according to the size of jars used.

Flexible connections are taken from the two black spots between the jars to the two outside terminals of the battery for charging purposes.

Let me here tell you just what happens in this rectifier. The A.C. current coming from the mains is passed through the lamp to the rectifier. Now current will flow from aluminium to lead or lead to aluminium but not from lead to lead nor from aluminium to aluminium consequently at the two black spots you have a direct current flowing into the battery.

You are curious as to the lamp. Well it will only pass the amperage which it in itself will consume so that if we used a lamp which consumes 250 watts on a 240 volt circuit it will be seen that 1 ampere is being fed to the battery. One ampere I am sure you will find is too quick for our purpose, 1/2 an amp. being sufficient, therefore it is advisable to use a 32 C.P. CARBON FILAMENT Lamp which consumes approximately 120 watts or 1/2 an amp. This is quite clear now isn't it?

Now to find the polarity is a simple matter. Take connections from the two black spots in the rectifier and immerse both wires in a glass of water. With the lamp in series switch on the current. It will then be seen that from 1 wire many bubbles rise. This is the negative lead. Raise or lower the aluminium electrodes until you find the height at which there is most bubbling from the negative lead and maintain them at this height. This is the maximum amperage point.

Of course before this battery will hold the charge, the plates have to be formed. Do this by connecting the charger (not a horse but the rectifier charger) to the battery and charge for 15 minutes continuously. Switch off the current and discharge the battery by connecting the two outside terminals to the lamp which will

glow and gradually die right out. Now reverse the polarity from the rectifier and charge up again. Once more discharge through the lamp.

Repeat this twice again, reversing polarity each time. Finally charge continuously for 3 hours at the end of which time you will find that the positive plate in any tube has turned a glorious chocolate colour while the negative is grey. The cells will now hold their charge much better.

Lastly bear in mind that before listening in each night and while you are having tea charge up your Battery for from 10 to 20 minutes and you will have sufficient high tension current to carry you through the evening.

Here endeth this little lesson with a further boost of the best High Tension Unit which I have used, the cheapest in the long run and one which only requires a little distilled water adding to the cells every six months to keep it in order for the next five years.

"Goodnight, goodnight."

PRIVATE BROADCASTING STATION.

It is reported that in the near future a modern Broadcasting station is to be installed by Mr. Hume of the Hume Pipe Coy., Adelaide. The station is to be operated by amateurs, and the regular programmes will be put out for the benefit of the South Australian Radio public.

(Continued from page 7)

The next location was at another house on the other side of the town. With a slightly smaller aerial results similar to the preceding were obtained. Q.R.M. was bad, however, and in order to reduce it, the aerial was removed from the set. The signal strength was then sufficient to fill a fair sized room (2FC).

During these tests, 3AR, the Melbourne broadcaster (400 miles) could be tuned in on the speaker with good strength, as could 2BL, Wagga, etc.

(Continued from page 7)

Continuing his study of the three electrode tube it seems undoubtedly true that Armstrong understood the action of the audion better than any one else in the world.

WIRELESS APPARATUS

New or Second-hand, Bought, Sold or Exchanged

HOWELL'S

19 Barlow Street

COMPETITION

- 1st Prize--Complete One Stage Amplifier Value £5-5-0
- 2nd Prize--One Pair Trimm's Professional Head Sets Value £2-2-0

CONDITIONS

1. The prizes will be awarded to the best one valve set complete for reception of telephony.
2. All materials to be purchased from the Woollahra Radio Specialist.
3. There be no less than 10 entries.
4. Entries close with promoter, 30th June, 1924.
5. Sets to be completed and in hands of promoter not later than 31st July, 1924.
6. Results will be announced in Wireless Weekly on the 8th August, 1924.
7. The decision of the Editor of Wireless Weekly be final. Further particulars and bargain radio goods from:—

A. F. PRICE, Woollahra Radio Specialist
220 Oxford Street, Woollahra

WAV. 451



The Hotel St. Francis Dance Orchestra, Henry Halswood, leader. They play Tuesday and Saturday evenings in the ball-room of the Hotel St. Francis, San Francisco, and are broadcast by K.G.O. from 10 p.m. to 1 a.m. Pacific time.

RADIO COMMUNICATION COMPANY ACTIVE.

A contract has been granted to the Radio Communication Company of Great Britain for the erection and equipment of a chain of seven high-powered stations on the islands of St. Kitts, Antigua, Dominica, St. Lucia, St. Vincena, Grenada and Barbados, the crescent-shaped archipelago which flanks the Caribbean. Private enterprise, it is stated, is to be confined to the erection, equipment and initial testing. The stations are to be operated by the Pacific Cable Board, which is under the joint control of the Imperial Government and the Governments of Canada, Australia, and New Zealand. The contract cost is £62,670, which is shared by the Colonies concerned, the Canadian Government, and the Imperial Government.

This company, which has sprung into existence in England during the last few years, has grown quickly into a huge and powerful organisation, whose activities are world wide.

Recently the Radio Communication Company is stated to have absorbed the business of C. F. Elwell & Co., Ltd., which company erected the high-

The First Step to Success in Wireless
HEMOCRAFT'S HELPFUL CATALOG

130 Pages, 400 Illustrations, 50 Radio Diagrams

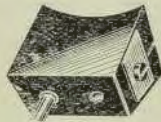
SPECIALLY written to enable everyone to select right apparatus for building radio sets at home. Every article is clearly described; fully illustrated with 400 illustrations, 50 complete circuits, particulars of transmitting stations and a collection of most valuable information for all experimenters and others interested.

The whole field of Radio supplies, from a tiny switch point, to a complete set of materials grouped for you to build a set, are shown; also complete Radio Sets, from a modest Crystal Set at 25/- to a Console Grand 8 Valve Set at £98.

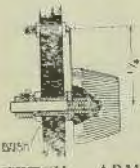
Homecrafts serve you Right

Their 20 Years' Experience Assures That There are whole pages of popular priced pieces of all sorts of materials required by the experimenter and so hard to get elsewhere.

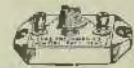
HEMOCRAFTS 211 SWANSTON ST.
(F. H. McELROY) MELB



H.C. PLUGS.



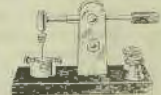
SWITCH ARMS.
1/6 1/9, 2/6.



VARIABLE GRID LEAKS - 4/9 each.



PEEP SCREEN.
Volt Meters and Ammeters. Easy to fit. Price, 18/6.



CRYSTAL DETECTORS, from 2/6 each.



RHEOSTATS, from 4/- each.

power station at Northolt, for the British Post Office, and has also to its credit the erection of other highly efficient high-power stations in other parts of the world.

Shortly after the war the Radio Communication Company became active in marine wireless, with the result that within a few months it took over from the Marconi Company the control of the wireless apparatus on many of the ships of the big British shipping companies. These included the Cunard and White Star Line Trans-Atlantic liners, the Royal Mail Steam Packet Company steamers trading to South America, the Union Castle Line to South Africa, and the Orient S.N. to Australia.

So far the Radio Communication Company has not been actively concerned with the development of Australian wireless, although an office is maintained at Melbourne, but according to reports, the company may in the near future take over the wireless installations on a number of vessels engaged in the Australasian trade.

Persons who take an interest in listening "afterhours" to the B.B.C. tests, says "Irish Radio Journal," were treated to a further attempt to relay an American station after midnight on 6th April, when W.G.Y. supplied a programme for that purpose. Captain Eckersley, when making the announcement at midnight regarding above, rather knocked the enthusiasm out of any would-be listeners by stating that he would not speak again, as his fire had gone out; the inference being that he was so doubtful as to the results, he was going to turn in and let others do the listening. Perhaps he did not wish to risk the destruction of another receiving set. It is stated one was thrown out of a window on a former occasion when the results of a similar experiment did not come up to his expectation. In a previous American test a listener in the North fell asleep whilst waiting for the performance to begin. When the switching over took place a crash of amplified atmospherics wakened him so effectively that for days he could scarcely look at the wireless set. The last attempt to relay America, on the date mentioned above, was certainly an improvement atmospherically on all the previous efforts.

The music came in better and one could hear a much greater number of the different instruments. The speech, however, was very thick, and very difficult to read. The same result was noticed on all the B.B.C. stations, so the fault must lie with the American transmitting apparatus, or the powerful receiving set used by test engineers. The experiment did not provide a good musical entertainment, but those interested in wireless reception are very grateful to Captain Eckersley for permitting them to listen in to the test.

D.X.

Here is the D.X. list of Mr. N. Edwards, 42 Pollen Street, Auckland, N.Z.:

N.S.W.—2AR, 2BB, 2CM, 2CDM, 2CC, 2CH, 2CK, 2DS, 2HM, 2GF, 2JM, 2KC, 2LO, 2OI, 2RA, 2UW, 2YI, 2YB, 2YG, 2YA, 2ZG, 2ZZ.

Victoria.—3BD, 3BM, 3BQ, 3BH, 3BJ, 3ER, 3HH, 3JL, 3JH, 3LM.

Queensland.—4CM.

South Australia.—5BQ.

Western Australia.—6AG.

Any of the above amateurs requiring QSL cards, please write to Mr. N. Edwards, 42 Pollen Street., Auckland, N.Z.

ELECTRICITY HOUSE MARVELLOUS WIRELESS VALUES

Switch Arms, N.P. 1/6
N.P. Terminals, each 4d.
Crystal Cups, N.P., each 6d.
English Valve Sockets 2/-
6in. Slider and Bar, each 2/-
Audio Transformers, to arrive 20/-
.001 Condensers, with dial 20/-
Valve Socket and Rheostat combined,
on base wired, with terminals 25/-
2 Coil Mountings 15/-
3 Coil Mountings 21/-
With Vernier, each extra 5/-

N.P. Studs and Nuts, dozen 1/6
Detector Arms, N.P. 2/-
Series Parallel Switches, each 3/6
American Valve Sockets 4/6
Potentiometers 10/6
Ebonite $\frac{1}{2}$ in. $\frac{3}{4}$ d. per sq. in. $\frac{1}{16}$ in.
1 $\frac{1}{2}$ d. per sq. in.
Condenser Washers, Small, 4d. doz.;
Large, doz 6d.

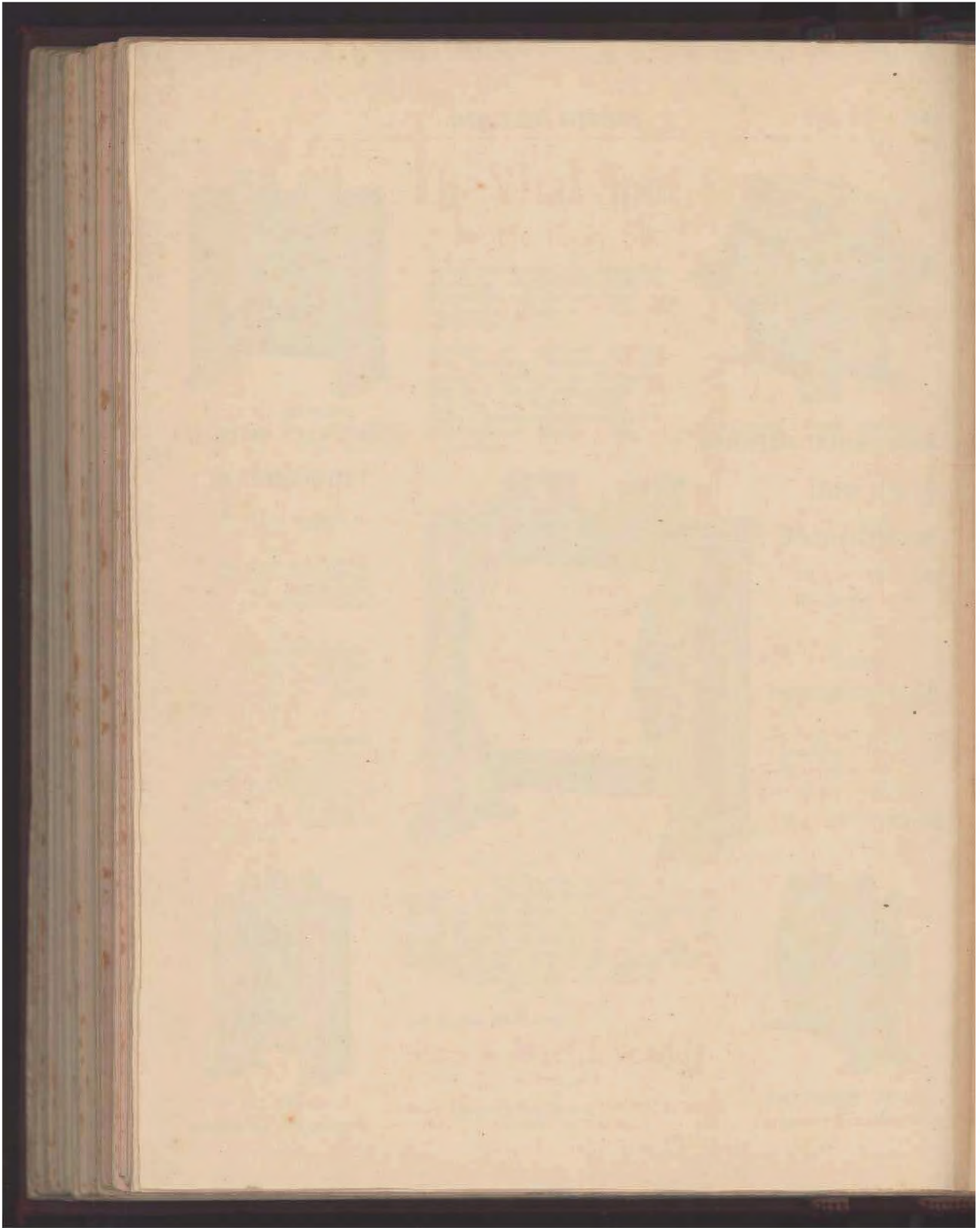
All makes of head sets in stock.

WE SUPPLY COMPLETE SETS—CRYSTAL OR VALVE.

ELECTRICITY HOUSE

387 GEORGE STREET

J. S. MARKS, 2 G.R. Manager





12 WIRELESS WEEKLY Friday, June 14th, 1924
13 WIRELESS WEEKLY

BROADCAST and EXPERIMENTAL RADIO RECEIVING SETS

Range up to 1,000 Miles. Prices: Crystal Sets from £4 Valve Sets £16 to £75.

As illustrated, Three-Valve Receiver complete with Phones, Radiotron Valves, Atlas Speaker, Batteries, Aerial Materials, etc.

Various other designs and Cabinets finished to match any furniture.





Price
£7 10s.


Gramophone Attachment
£3 15s. 6d.


ATLAS SPEAKER
A SPEAKER OF DISTINCTION

The Atlas Radio Reproduces all the Artist's performance from the Gramophone with more realism than the original music.
Fidelity and stability throughout. No Metal in any part.
New reproduction.



Radio Broadcasting solves all your Home Entertainment Problems.





This Week's Special.

**GENUINE
MURDOCK'S PHONES**

25s. per set.

Only a limited supply available.

The Colville-Moore Wireless Supplies Ltd.
10 ROWE STREET - - - - - SYDNEY

Fig. 15-166 RADIO EQUIPMENT, of 1st to 10th Quality, at Competitive Prices. "COOL MOORE" 10 Rowe St., Sydney.

This distinguished name is a feature with N.H.M. Crystal Identification.

4 CK. Toowoomba, Q.

The following description of a low power transmitter will no doubt be of interest to the experimenter who is desirous of constructing a low power set quite capable of long distance communication. With the exception of the necessary 5 watt valve, milliamp meter and grid leak, all the component parts were home constructed. Reference to the diagram will show that there is nothing extraordinary in the circuit used, it being an orthodox 3 coil. This circuit was adopted after a good deal of experimenting with different "hook-ups," and its advantages are ease of control and simplicity of operation.

The plate coil L2 is wound on a 4 inch diameter ebonite tube threaded with 8 turns to the inch, 40 turns of 16 SWG bare copper is wound in the grooves, giving a spacing between turns of approximately 1/16 in. A .0003 variable condenser is placed in parallel with this coil for tuning to the required wave length. Grid coil L3 consists of 30 turns 22 DCC wound on ebonite former and rotating in upper end of plate coil to give variable coupling.

Aerial coil L1 has 25 turns of 14 D.C.C. wound close on 4 in. ebonite tube, and tapped every second turn. This is variably coupled to plate coil L2 and grid coil L3.

Grid condenser C1 has a capacity of approximately .001mfd and by pass condenser C3 .005mfd. Both are fixed and consist of copper foil 2in. x 1in. and mica dielectric.

Grid leak is a non inductive Kellog 12,000 ohm resistance.

Two honey-comb coils, one of 350 turns in the positive HT, and one of

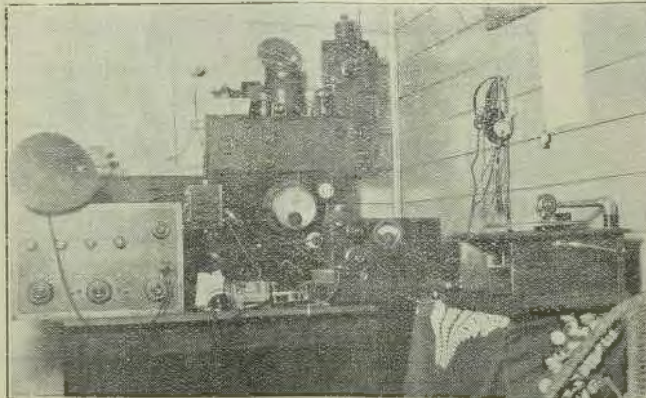
200 turns in the negative HT do duty as radio frequency chokes. Counterpoise inductance C4 consists of 25 turns of 14 D.C.C. wound on a 5 inch cardboard former, and tapped at every turn. Counterpoise consists of 3 wires lan type, 10ft. above ground and insulated therefrom. One wire runs directly under aerial and the other two radiate from the lead in, to 50 feet apart at the free end.

This counterpoise has only been installed since the end of April and all tests conducted prior to that date were with earth only. The radiation has noticeably increased since its installation.

The aerial itself is an inverted L. Two 14g. bare copper wires on 6ft. spreaders 50ft. high at free end and 30 ft. high at lead in. Total length to earth is approximately 120 ft. Six 2in. reel insulators are used at each end of the aerial.

Radiation meter is of the hot wire type and home made. This is not accurately calibrated and only serves to indicate the presence of high frequency energy in the aerial.

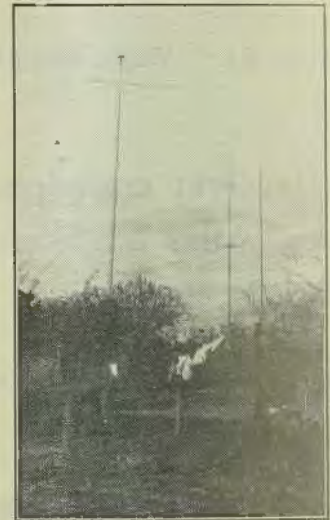
For "phone" both absorption and grid modulation is arranged for, but owing to simplicity and excellence of modulation attained, the absorption method is used in preference to grid. The absorption loop is a single turn of 14 gauge D.C.C. placed around the upper end of plate coil L2. A Ford Spark coil with rewound primary serves for the grid modulation, in conjunction with a 6v battery (not shown in diagram). No battery is necessary with the absorption method. A Kellog microphone is used for speech and



music. For I.C.W. the key is placed in the positive HT lead.

High tension supply is derived from 220v. D.C. house lighting mains. With variations of load this is more often than not somewhat below 220 v. The maximum plate current yet attained is 18 to 20 milliamps, under the most favourable conditions.

15 milliamps is the usual working input during the evening. No choke coil or smoothing condenser are used as the D.C. hum is not very notice-



Aerial of 4 CK.

able. An 8v. accumulator is used on the UV 202 valve, and it is always operated at 7.5 v. 2.35 amp.

This station has been logged as follows, 3DD and 3BH; strength QSA and note good. 3BH was successfully worked on 2 way 1CW without pre-arrangement.

2ZN (worked) 2UW, 2HM, 2GO, 2 CR, 2BK (worked), also sent QSL's. 2ZN also reports successful reception of phone. The best report received so far was from Mr. R. Thomas, Rose Bay, who, under most difficult circumstances succeeded in logging speech on a detector only. The recent Trans-Pacific tests conducted by 2 CDM on the "Tahiti" show the call sign 4CK in three places in the log, once on the way over at 1830 miles from Australia and twice on the journey from N.Z. at 1200 and 900 miles respectively. For reception a 4 valve neutrodyne circuit is invariably

Continued from page 14

Broadcast Receiving Sets and License Forms

Together with the FREE SERVICE of Broadcasters (Sydney) Limited may be obtained from the following

L. P. R. Bean & Co. Ltd.
229 Castlereagh St., Sydney.
Telephone: City 353.

United Distributing Coys. (N.S.W.) Ltd.
(Wholesalers)
28 Clarence Street, Sydney.
Telephone: City 3566.

W. Harry Wiles
60-62 Goulburn Street Sydney.
Telephone City 3688 1 door from Pitt St.

Wireless Supplies Ltd.
21 Royal Arcade, Sydney
Telephone: M 3378.

E. R. Cullen
96 Bathurst Street
Telephones: City 869, 2596.

Radio House
619 George Street Sydney
Telephone: City 1487.

Colville-Moore Wireless Supplies
10 Rowe Street Sydney.
Telephone: B2261.

Ramsay, Sharp & Co. Ltd.
217 George Street, Sydney.
Telephone: City 3176.

The Home Electric
106a King Street, Sydney.
Telephone: B 5565.

Swains Ltd.
119-123 Pitt Street, Sydney.

used, a single valve regenerative set is occasionally pressed into service. K. G.O., California, has been heard regularly every Sunday evening for the last two months—under atmospheric conditions as early as 5 p.m. On the evening of May 18th, his strength was sufficient to operate a loud speaker with one stage of audio amplification. This station (4CK) is situated 2000 feet above sea level, a fact that may have a bearing on the distance of reception and transmission.

THIS INTERESTS YOU WIRELESS PEOPLE.

I wish to announce that I am prepared to manufacture wireless cabinets, etc., from any timber, to any design, at wholesale prices.

F. COCHRAN, Furniture Manufacturer and Wireless Cabinet Expert, 48 Lancelot Street, Five Dock.

FOR SALE.—3 Valve Receiver, complete except for accumulator. Maple cabinet. Cunningham valves, almost new. Going cheap. 36 Greville St., Clovelly.

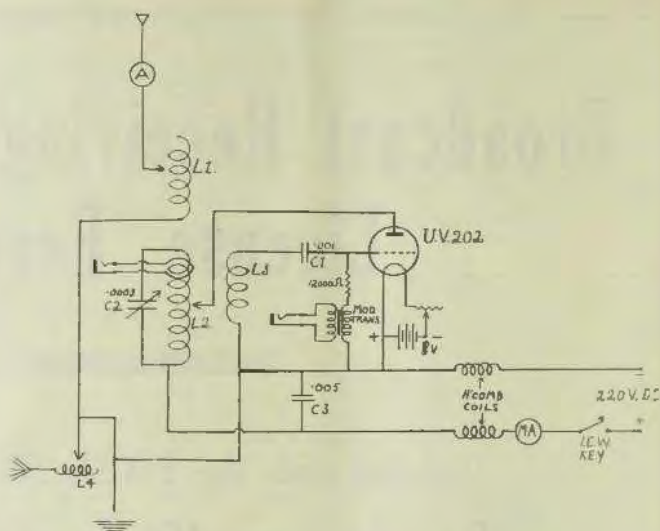


Diagram showing circuit used at 4CK.

“Federal” Audio Frequency Transformer No. 226

AMPLIFICATION WITHOUT DISTORTION.

This transformer pronounced by leading radio engineers, after exhaustive tests, to excel in all essentials.

Federal A.F. Transformer No. 226 can be used with any vacuum tubes in common use.

It furnishes greater amplification and faithfulness of reproduction of both voice and orchestral music.

Instal a No. 226 on your present set. It will prove a revelation to you.

Price 37/6

EVERY UNIT GUARANTEED.

The Home Electric

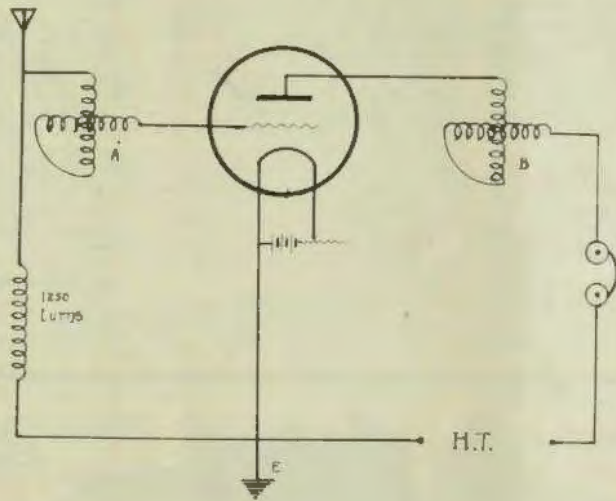
Agents for Federal Telephone and Telegraph Co.

**106a King Street
SYDNEY**

Phone B5565.

Illustration of the well-known "Autoplex" Circuit

It is a simple circuit to assemble and is not costly. This circuit is well-known to readers of Wireless Weekly. It is simple to make and the results prove that it is not as costly to assemble as most standard circuits.



What is needed:

Aerial Wire, "Copperweld," from	3/6
Variometers (2) from	30/-
Valve, U.V. 199	35/-
Valve Sockets, from	3/6
1250 Coil, from	18/6
Rheostats, from	5/3
Bakelite Panel, from	4/6

With proper parts and care in assembling, this circuit will operate a loud speaker.

Further particulars and details of this receiver may be obtained from.

Radio Company Limited

15 Loftus Street, (near Circular Quay) Sydney

A SUPER CRYSTAL SET.

By A. W. T.

I have just received a communication from my friend, Mr. Scratchier, of the Association for the Promotion of Catwhisker-tiddling among Infants—stating that his society finds a very urgent need for something in the nature of a "dinkum" crystal set.

Well, after some second thought I became convinced of the cold fact myself—and here's the result!

Now this set is purely and simply for the experimenter, and consequently, the results depend largely on the operation of the set. I make no claim of cheapness either—although it is not an expensive set. But I make one claim, and that is, if you put good gear into the set, you'll get good "sigs." out of it.

Before going into the details of the set I would just like to mention a few facts about its performance.

I put this particular set in on May 17th, 1923; here are a few of the stations logged.

2CI, 2ZG, 2LO, 2CM, 2FA, 2IX, 2MB, 2GR, 2BB, 2DK, 2KC, 2LI, 2JM, 2UW, 2WV, 2DS, VIS, VIM, VIB, and hundreds of ships, all in a few months.

Regarding these stations, at that they didn't use above 10 watts, and their transmissions excepting 2CM and a few others were not so strong as they are now, besides, there were hardly any others transmitting then! Another point to remember is this, I am 10 miles south of Sydney, and very greatly screened by pine trees 70 feet high!

My aerial was a single wire, 40 ft. high and 100ft. long.

I found one little point very useful, that is keep moving the cat-whisker while you are tuning, and if there's anything "doing" you have every chance of hearing it—on the other hand, if you join the whisker on the crystal and start tuning, it's ten to one you haven't found a sensitive spot.

Of course this only applies if you haven't a buzzer. Another fairly reliable method is to scratch round until you hear some static (if they is any) and then get it as loud as possible.

A better way still is to tune up to 600 metres and get the ships at their loudest.

In passing, there's another handy little tip, if you're listening for some telephony move the whisker while

you're tuning and you'll hear a rushing sound when you pick up the carrier wave. If the signals are strong you'll also hear a "plop" as you break contact with one of the swetch studs.

Now to get back to the set itself.

The tuning is accomplished by means of "slab" coils which are tapped at regular intervals. There are two of these coils, the primary, which is tapped, and the secondary which is tuned by means of a variable condenser.

There are three crystal detectors, two of the ordinary whisker type and one for the combination crystal detector. These are controlled by a three-point switch.

The telephones are wound to a resistance of 4,000 ohms, and are of any good make, preferably "Strombery Carlson" or "Trimms'".

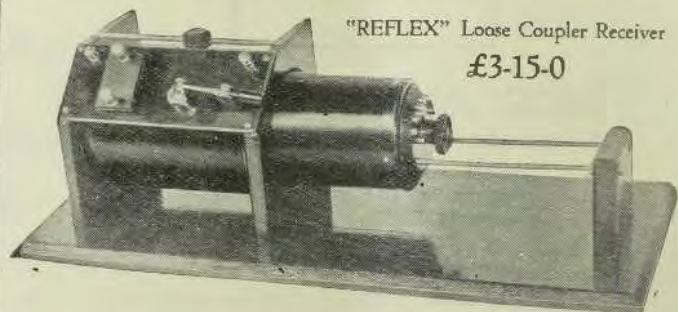
A word on telephones—the resistance of the telephone is not the all-important factor to consider when purchasing a pair; what really counts is—the number of turns of wire round the magnet inside the receiver. It stands to reason if it was the resistance that was wanted, it would be best to wind them with resistance wire:

OUR SPECIAL
LINE

PEERLESS
Head Phones

2000 Ohms.

30/-



"REFLEX" Loose Coupler Receiver

£3-15-0

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

Postage 1/6

RADIO HOUSE
619 George Street, Sydney





THE LEICHHARDT AND DISTRICT RADIO SOCIETY.

The membership of the Leichhardt and District Radio Society continues to increase steadily, and four new names were added to the roll on Tuesday, June 3rd, when the twentieth monthly business meeting was held, at the club-room, 176 Johnston Street, Annandale.

The attendance was excellent, and members entered spiritedly into the several discussions which took place on the various matters of importance which were brought up before the meeting for consideration.

Mr. W. J. Zech, the society's delegate to the council of kindred bodies affiliated with the Wireless Institute of Australia, tabled his report of the proceedings of the first meeting held on May 27th last, and spoke in glowing terms of the business transacted thereat.

Arrangements were finalised for the reception of Mr. and Mrs. Chilton, at the following meeting. Mr. Chilton is at present officer-in-charge of the radio station at Pennant Hills, and before his departure for Townsville, members of this society desire to show practical appreciation of the many courtesies extended to them during the several visits made to V.I.S. some time ago.

The "sale and exchange" evening, conducted on May 20th, proved so successful that it has been decided to hold another on June 24th, when members will have an opportunity of disposing to fellow-members gear for which they have no further use.

The society has obtained from the Sydney Esperanto Society an offer of the delivery of a lecture on Esperanto. It has been decided to accept the offer, and the lecture will probably be delivered either on July 8th or 15th. More definite information will be published in these columns later.

It has been decided to reconstruct the society's receiving set into the three valve type, and the work will be proceeded with immediately.

On Tuesday night next, the ninth lecture of the syllabus, will be delivered by Mr. F. Lett, who will deal with

"Radio-frequency Amplification." Any local experimenters interested in the subject are invited to be present, and inquiries regarding the activities of the society should be addressed to the Hon. Secretary, Mr. W. J. Zech, 145 Booth Street, Annandale.

WAVERLEY RADIO CLUB.

Little business was done at the meeting of the club, held on the 3rd June, at which Mr. M. Perry occupied the chair. The correspondence included a letter from the Esperanto Society, and it was decided to accept the society's kind invitation to give a lecture on the 17th inst.

The delegate to the Institute Council, Mr. A. Burrows, made his report on the meeting. A motion was afterwards carried endorsing his actions. General discussion closed the meeting.

MARRICKVILLE DISTRICT RADIO CLUB.

An interesting night was passed on Monday 2nd inst. at the School of

Arts Hall, Illawarra Road, Marrickville.

After the usual business had been dispensed with Mr. Hamilton, the President called on Mr. A. R. Foster a recent arrival from Scotland to describe the progress of wireless in that land.

Mr. Foster entertained the club in a breezy way and drew comparisons between Scotland and Australia, instancing the greater number of crystal sets there compared to here.

A crystal set could be used with an indoor aerial up to ten miles from Glasgow Broadcasting Station and results assured.

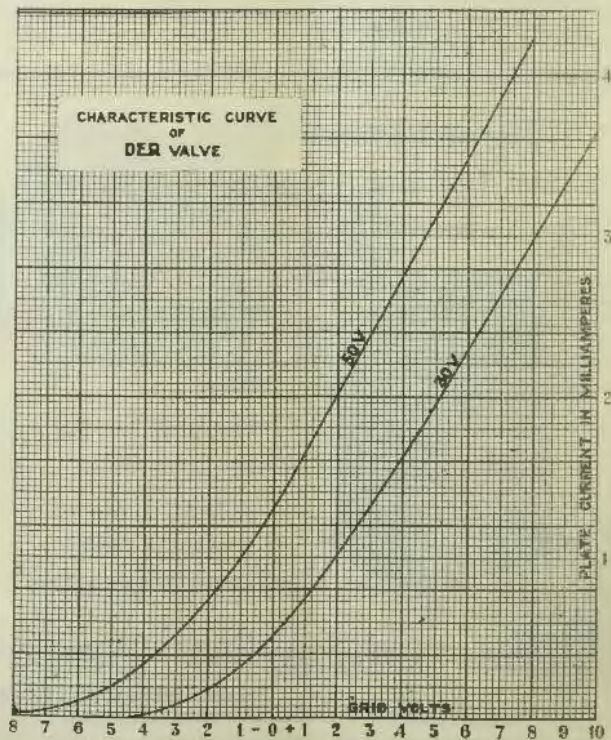
On Monday 16th inst. Mr. Malcolm Perry will lecture to this club.

Everyone is invited to roll up.

Particulars of membership may be obtained from Secretary H. W. Hemming 23 Central Avenue Marrickville.

GOOD RESULTS IN AUCKLAND.

KGO and KHJ (California) are being received regularly by Mr. Mac



Block by courtesy Amalgamated Wireless Aistia, Ltd.

Col-mo new Price List is nearly ready. Send in your name for a copy.

Vitty of the American Consulate Auckland N.Z. using a four valve reflex receiver and a loop aerial. Sydney Broadcasting comes in well on a loud speaker. The static when receiving Sydney seems to be worse than when the loop is used on American stations.

The most remarkable results so far achieved by Mr. Mac Vitty occurred last November, when W.J.A.Z. Chicago came in with absolute clarity. This station however has not been heard since.

POSTAL INSTITUTE RADIO CLUB.

Another club has come into existence known as the Postal Institute Radio Club founded by a few enthusiastic members of the P.M.G. Dept. and open to all members of the Com. Public Service. Our first meeting was marked by an address by the Radio Inspector Mr. W. S. Crawford on, "The Position of the Amateur and our second brought over thirty members to hear Mr. Malcolm Perry comment in his racy style on Experimenters and their Troubles. We can promise intending members equally good fare for the ensuing three months and also all the advantages of a beginners class and the social advantages of the Institute. Meetings are held at the Institute Rooms Haymarket Post

Office alternate Tuesdays and the next will be on 10th June. Further particulars can be obtained the Hon Sec Mr. J. F. Nichol Telephone workshops or the Secretary of the Postal Institute G.P.O. Sydney.

WIRELESS INSTITUTE OF AUSTRALIA.

New South Wales Division.
All Experimenters Night

The lecture arranged under the auspices of the Wireless Institute to take place on July 4th, will be eagerly looked forward to by all experimenters and radio hams. On this occasion Mr. Alec Hector will speak on the subject of "Radio-activity—its educational value", and the Assembly Hall of the Education Building has been engaged for the occasion. All experimenters and others interested in radio are cordially invited to attend. The meeting starts at 8 p.m.

DELEGATE'S COUNCIL OF AFFILIATED SOCIETIES.

At the recently held meeting of the Delegate's Council, among other important business, a resolution was passed to the effect that an emphatic protest be made against any alteration in the license fees charged to the experimenters and that the terms of the resolution be forwarded to the Post-

master General, at the earliest possible moment. This resolution confirmed the action already taken by the Executive Council of the Wireless Institute. But the following telegram has been despatched to the Postmaster General:—

"Wireless Institute and affiliated clubs New South Wales unanimously decided matter experimental license fees emphatically protest against any amendment existing regulations."

CROYDON RADIO CLUB.

On Saturday May 31st the usual meeting was held at the Club Rooms "Rockleigh," Long Street Croydon, at 7:30 p.m., when the business in hand was quickly discussed and attended to.

It was decided to affiliate with the Wireless Institute (N.S. Wales Division) our worthy Secretary Mr. G. M. Cutts being appointed the 1st delegate.

Arranged that the Club hold its next Social at "Rockleigh" on the 15th inst June and our hearty thanks were accorded to M. C. W. Slade, who placed the many facilities of his home at our disposal for this event.

In order to insure the success of the forthcoming social a special Entertainments Committee was appointed.

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
Phone W 1205

At the same time we elected a new Constructional Committee in order to complete the transmitter at an early date.

The officers elected for the above committee are as follows:—Messrs. Slade, Ledger, Ferguson, Craig, Cutts, Bundle, Luckcuck, Lucas, and Walker.

Our good friend Mr. Slade proved invaluable at this meeting, with his vast knowledge of the S.T. 100 Reflex circuit, which he passed on to us in a most interesting lecture.

The meeting closed at 10 pm. Intending members are respectfully invited to communicate with the Hon. Secretary Mr. G. M. Cutts, "Carwell," Highbury Street Croydon.

Correspondence

77 Park Road,
Auburn.
30/5/24.

Editor,
"Wireless Weekly,"
Sydney.

Sir,—To-night I read in your valuable paper your article on "D.X. Work."

Being an enthusiastic experimenter, mind, an experimenter, not a broadcast listener (by this I do not want to convey the idea that I don't listen to broadcasting, but my heart and soul is

in experimental wireless, and has been for years; even before broadcasting was mooted), I am grieved at the want of success of some of the genuine experimenters lately. I might here state that those who have had some remarkable successes should not be overlooked, but the point is why should not the genuine experimenter be allowed to use regeneration?

It seems to me more than half the battle in long distance reception. I have been for some time now, concentrating on non-regenerative receivers, and the most I can say for them is that they simply further the interests of the people who sell valves and those who charge batteries.

The other hurting point is the fact that many supposed experimenters are listening-in to broadcasting with regenerative receivers, while the hard-working, genuine experimenter is doing, or trying to do, D.X. work on non-regenerative circuits. I think it is high time that regeneration be allowed genuine experimenters. There would be no Q.R.M. on broadcast wave lengths, because the genuine experimenter can handle his set, and the encouragement to keep down and do "D.X." work would be much greater.

I am writing this letter in the hope that you can find room to publish it, or

the vital extracts, and also help others to see why their "D.X." records are so low under the present regulations.

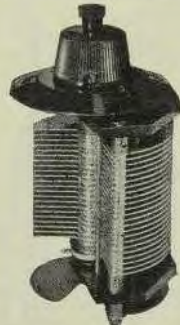
While on the subject of "D.X.," I must confess that I know one experimenter who has on a three valve non-regenerative circuit logged a "ham" from every State, including Tasmania and New Zealand, but this could have been accomplished on a regenerative set at half the cost.—Yours faithfully,

GEO. R. CHALLENGER,
(Station 2CC).

WIRELESS EXPERIMENTER'S

Have you tried the S.T. 150 Circuit? Two valves, but functions as three, R.F., D. and A.F., I am now selling this long-range receiving set in Maple Cabinets, complete with Valves, Head Phones, Honeycomb Coils, and Batteries for £17; also an extra special one-valve set (will work a loud speaker), complete as above for £9.

Demonstrations every evening 7 till 10.
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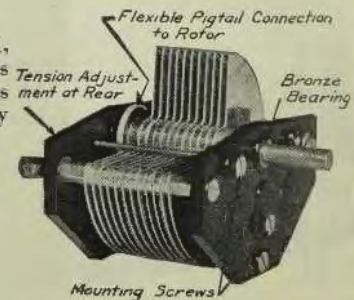
THE new type K. & C. Variable Condenser is the first choice of the discriminating experimenter and radio enthusiast. All that is desirable in a good variable capacity unit will be found incorporated in this one. It has moulded end plates; pig-tail connection to the rotating plates, clamped and soldered at each end to prevent breaking off; insulated mounting screws, easily adjusted tension spring for control of the rotating plates; stationary plates permanently locked, preventing disarrangement; "straight-line" curve giving gradual change of capacity, and accuracy to two-thousandths of an inch in plate spacing.

The K and C condenser is made in 3, 7, 13, 17, 23, 31, 43 and 63-plate sizes, and each size above the 3-plate is obtainable with vernier attachment. The new condenser is presented with the usual K and C satisfaction or money back guarantee.

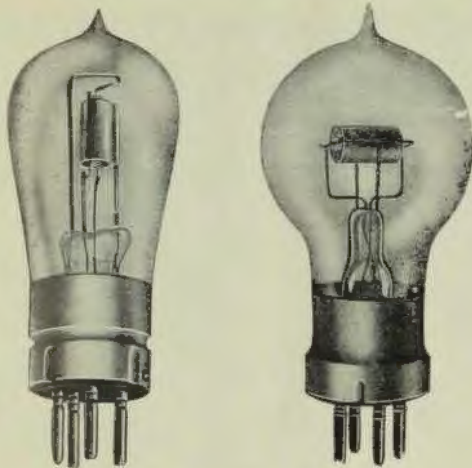
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D.E.R.

R.

TYPE D.E.R. VALVE.

The special feature of this valve is that the filament current and voltage, i.e., the working filament wattage, is very small, being less than one-third of that required by ordinary valves having similar operating characteristics. The filament runs at a dull red temperature, thus ensuring a very long life as well as freedom from crackling, etc.

The D.E.R. Valve operates on 1.5 to 1.8 volts at 0.35 to 0.40 amps., so it will be seen that dry cells may be conveniently used for filament lighting.

The chemical structure of the filament is responsible for the high electronic emission at such a low temperature. When heated by the current passing through it, the tungsten filament undergoes a chemical change which causes a layer of pure thorium to be formed on the outside of the filament. This layer supplies the electrons necessary to the functioning of the tube. Inside the filament just under this layer more thorium atoms are deposited, being drawn from the inside of the filament slowly. The D.E.R. might almost be termed "the valve with nine lives." If the filament is operated at too high a temperature the thorium layer vaporises, electronic emission falls off and the valve becomes in-operative. However, by burning the filament at rated voltage with plate voltage off for a period of time normal electron emission can be regained.

CHARACTERISTICS OF D. E. R.

Type D. E. R.	Filament Battery Voltage 2	Filament Terminal Volts 1.5-1.8
Fil. Amps. 0.35-0.40	Anode Volts 30-50	Overall Length 115 m/m
		Approx. Diam. of Bulb 45 m/m.

Socket Type: "R."

THE "R" VALVE is a well known type and is extensively employed for general reception purposes. It gives good results as a detector, L.F. amplifier or oscillator, and is one of the best all-round valves for use where it is not desired to employ a special type for a specific purpose.

CHARACTERISTICS OF "B."

Type "R"	Filament Battery Voltage 6	Filament Terminal Volts 4.0
Fil. Amps. 0.67	Anode Volts 70	Approx. Length 110 m/m
		Diam. of Bulb 54 m/m

Socket Type: "R."

A Canadian listener wrote to one of the Eastern broadcasting stations requesting that they discontinue telling in their bedtime stories that bears eat naughty children. He said that the children became afraid after listening to these stories, because there were plenty of bears in his section of the country.

Station KHJ, Los Angeles, has several canaries in the studio, and the melodies of the feathered entertainers are one of the distinguishing features of the station. When placed properly before the microphone these birds can be heard over the resounding volume of a brass band. Listeners in Cuba, New Zealand and the Eastern section of the United States have heard their songs.

A prominent essayist described his debut before the microphone as follows: "I found it a weird experience. Imagine a long room, something between a Turkish bath and a circus tent, whose walls and ceiling were wholly draped with curtains. I had the feeling that I had entered some other world than this, and watched the efforts of another order of beings to communicate with the children of men. I advanced toward the microphone. I stood a few feet in front of the dumb shining mystery and began to read to a vast unseen, unresponsive audience."

The Westinghouse Electric and Manufacturing Company has made arrangements to sell New York City a 1,000 watt broadcasting station to be installed on top of the Municipal Building.

The equipment is now at Rio Janeiro, having been installed there for use at the Brazilian Centennial Exposition. It operated there under the call letters SPC from September 7, 1922 to March 31, 1923. It is reported to be an exact duplicate of Station KDKA, Pittsburgh.

BOOKS ON WIRELESS

Practical Wireless Valve Circuits, by J. Scott-Taggart. Price 3/9 posted.

Wireless Valves Simply Explained, by J. Scott-Taggart. Price 3/9 posted.

Construction of Wireless Receiving Sets, by P. Tyers. Price 2/3 posted.

Letts' Amateur Wireless Notebook and Diary, 1924, leather bound, reduced from 3/6 to 1/9. Postage, 3d. extra.

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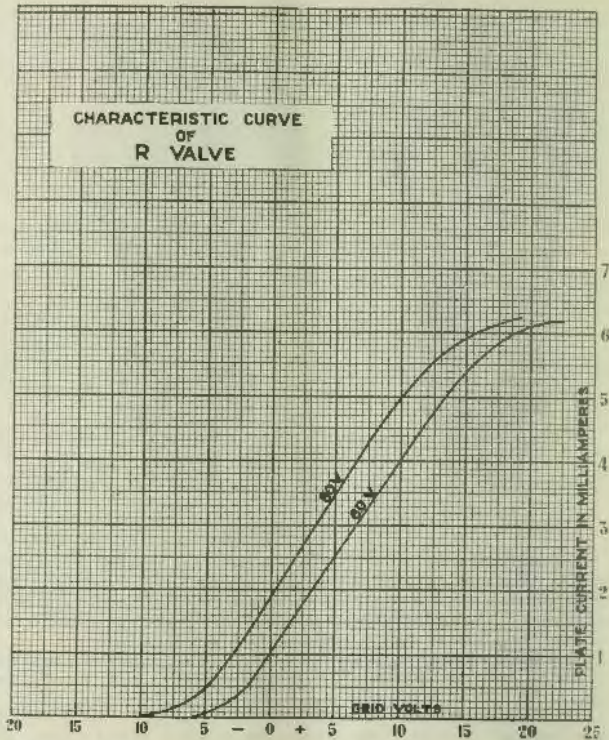
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Mothers of children with ears that are inclined to protrude, no longer have to tie a string around them to keep them close to the head. They now make the excuse that as little Willie's ears are prone to stick out, father must buy a radio set, so that the head phones may serve the purpose of the string. This cures the tendency of Willie to flap his ears and at the same time provides endless amusement for the rest of the family. Whether it be protruding ears ingrowing nails, ills mental or physical, real or fancied, radio is the best all-round cure. To the blind, light; to the bed-ridden, a new lease of life; awakening interest in those to whom life had ceased to be worth while. These are some of the things on the credit side of the ledger to radio.

Published by A. W. Watt, "Strathaird," East Crescent St., McMahon's Point, for the proprietors and printers, Publicity Press Ltd., 33/37 Regent St., Sydney.

In the English Chancery Division, Mr. Justice Russell granted to the Ingranic Electric Co., Ltd., of Bedford, and 149 Queen Victoria Street, London, an injunction against the London Variometer Company restraining them until judgment in the action from infringing the registered trade-mark of the Igranic Electric Co., Ltd., and from selling or offering for sale electrical apparatus under or in connection with any circular, notice or advertisement containing the word "Ivanic," or any other colourable imitation of the word "Igranic." And from supplying in response to orders for "Igranic" apparatus goods not of the manufacture of the Igranic Electric Co., Ltd., and from otherwise passing off goods not of the manufacture of the Igranic Electric Co., Ltd., as being of the manufacture of that company.

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