





## Broadcasting at Grace Bros.

### Free Musical Entertainments by Wireless.

During the 12 days' sale from the 2nd to the 16th Grace Bros. have been treating their customers to grand opera music by wireless. Such well-known artists as Julia Caroli, Miss Ella Goodman, Countess Filipini, Jean Ethelstone were engaged, so as to make these series of concerts the success that they have been.

Considering that Grace Bros. is one of the newest recruits to the wireless field, it has achieved in so short a time what it has taken most firms, not only in Australia

but in America, twelve months or more to do. The whole of the wireless part of this enterprise was under the direction of Mr. F. I. G. Graf, who was ably assisted by Mr. W. C. Keogh and Mr. W. M. B. Veitch. A single 5-watt tube was used for transmission, and the station was heard as far away as Moss Vale on a valve, as far as Strathfield on a crystal. Six sets were situated in different parts of G.B. Building, and the concerts were heard by some thousands of people.

## Sure to get it at GRACE BROS.

### RADIO BARGAINS.

at our 12 DAYS' SALE.

#### MARCONI VALVES.

V-21	35/- each.
R	35/- each.
QX	36/- each.

#### DOUBLE HEADPHONES.

SIDPE (French make), 4,000-ohms.	27/6
MURDOCK'S, 2,000-ohms.	31/6
MURDOCK'S, 3,000-ohms.	31/6
BROWN'S, 2,000-ohms.	24/18/6

#### LOUD SPEAKERS.

"MAGNAVOX" BR.—The Rolls-Royce of Reproducers	£11 10/0
"BABY BROWN'S" 2,000-ohms. Adjustable Receiver	24 17/6
"CLEARSTONE" complete, with 2000-ohm. Receiver	47/6
"SPIROEA"—Suitable to use your own headset	25/-

#### "A" BATTERIES.

"LION" 6-volt, 60-A.H.	52/6
"FLAG" 6-volt, 66-A.H.	52/6
"EDISWAN" 4-volt, 40-A.H.	37/6

#### "B" BATTERIES.

42-Volts	12/-
30-Volts	0/-

Complete set of component parts for making your own Crystal Receiver in an up-to-date manner, with full instructions and diagrams for connections.

10/- ONLY (not including 'phones).

WRITE AND ENCLOSE 6d. IN STAMPS FOR OUR

WIRELESS CATALOGUE.

LET US KNOW IF YOU HEARD AND ENJOYED OUR

WIRELESS CONCERTS.



February 9th, 1923

WIRELESS WEEKLY

1

## RADIO COMPANY.

Before making your set, both Transmitter and Receiver, consult us for Designs and Novel Apparatus.

### Complete Valve Receiving Set £14.

Comprising—Cabinet, 6 Volt C.A.V. Battery  
Pair 2000 ohm Phones, 30 Volt "B" Battery,  
and Mounted Honeycombe Coil.

COUNTRY ORDERS SPECIALLY CATERED FOR.

18 ELIZABETH STREET,  
(Four doors from Hunter Street).

## RADIO COLLEGE

POSTER HOUSE

Cr. Lang & Grosvenor Streets.

Special Morse Code Class price 5s per night

Full Correspondence Course £4 4s.

1 month Course fully Illustrated £1 10s.

Full 3 months Course including Morse  
and Telephony £5 5s.

### ROUGH ON HANS.

The German radio fan is not blessed with the advantages of his confrere in other countries. The handicaps under which Hans struggles for instance, are briefly outlined by United States Vice-Consul Nathaniel B. Davis in Berlin:—

German manufacturers of radio apparatus and equipment are not in a position to make extensive deliveries of their product. This is due to the fact that up to the present time the demand has not been sufficiently great to warrant the manufacture of radio instruments in large quantities.

Amateur radio work is not popular in Germany and stations are not numerous. Radio telephony in particular is almost an unknown science except to engineers, professional operators, and experimenters. The principal reasons given for the lack of interest in radio on the part of the general public are that amateur stations are a luxury beyond the means of the average German, under present economic conditions, and official restrictions on their use.

All radio communication in Germany is under the control of the Federal Post Office Department, which operates the commer-

cial stations. Private installations must ordinarily be made by the Department; in exceptional cases private companies or individuals may be authorized to erect their own plants, but they must first obtain a license from the Post Office Department. The fee for such a license varies according to the size of the plant, with a maximum of 2,000 marks a year.

At present only one station in Berlin is licensed to broadcast. This station broadcasts market and exchange quotations. Subscribers to its service are permitted to install receiving stations upon payment of the license fee and the monthly subscription rates, which vary at present from 1,000 marks to 7,500 marks, according to the class of subscription. Subscribers may rent receiving sets from the Post Office Department for 2,500 marks a month if they do not desire to build their own.

In spite of the lack of demand for short-wave amateur apparatus there are a number of firms in and about Berlin which manufacture either complete receiving sets or parts. Vacuum tubes are almost unavailable, and practically all receiving sets manufactured in the Berlin district operate with crystal detectors.

### AMERICA RECOGNISES AUSTRALIAN SKILL.

Several articles have appeared recently in American Radio Magazines showing photographs and giving particulars of Mr. Charles MacLurean's station at Strathfield 2 C.M.

The January issue of "Radio Broadcast" devotes several pages to Mr. MacLurean's operations, and prefaces the article with the following editorial remarks:—

"In Australia, as here, the tendency in amateur transmitting is toward reduction in the power accompanied by increase in the distance covered. In this account of an Australian amateur's station there are several features which may well be taken advantage of by Americans. Operating power tubes below their rated filament voltage, for instance, is a practice not usually found in this country. Transmitting 450 miles on 3.8 watts is quite an achievement, and we find that our confreres in Australia are using such highly developed receiving arrangements as the "reflex" circuit. We should like to hear more from Australia."




  
 A TALK WITH "WIRELESS WEEKLY."
   


Australian amateurs and experimenters are apathetic.

"Wireless Weekly" makes this statement without reserve, and after an exhaustive survey of the present situation. One has only to attend meetings of the clubs to find out the truth of our assertion, and if further evidence is required we point to the lack of support given to movements organised with a view to popularising the science.

To say that ALL amateur wireless men are thus affected would be too sweeping. For instance,

there are the club officers. In the majority of cases these men are hard workers, and they give time and go to much trouble to make the club proceedings interesting to members. But do the members appreciate these efforts? If they do they don't show it. The usual attendance at club meetings is poor, and this can only be set down to apathy on the part of members.

Having the cause of amateur wireless at heart, "Wireless Weekly" appeals to those who take an interest in the science to throw off the cloak of apathy.

Give good support to your club, if you are a member of one, and join a club if you are not. Study to make yourself more proficient in the game, so that you can give help and instruction to your fellow amateurs, and control your own apparatus properly.

It is only by this activity that the game will flourish. Broadcasting will come, and the authorities will realise that amateurs are a force in the community.

So we repeat—Wake Up!

## The Trimm "Professional" Head Set.

3000 Ohms.

A QUALITY PHONE AT QUANTITY PRICE.

Perfect Reproduction and Articulation at any Range.

Weight Only 10½ ozs.

Compare these specifications with any head set on the market at any price, and see why the TRIMM "Professional" is the biggest value in the Head Set Field: . . . Moulded Bakelite cases and ear caps, which will not warp or crack like cheap composition, no exposed metal parts to become tarnished; single bar Tungsten steel magnets formed to shape to insure uniform tapering and magnetizing; coils wound with maximum number of turns of No. 40 enamelled wire to full resistance of 3,000 ohms; reinforced terminals of stranded wire brought out from coil windings to solder clips, coils covered with insulating cloth—no fine wires exposed; arched gap across cord terminals; improved type head band covered with resilient tubing—comfortable, light weight and distinctive in appearance.

PRICE . . . . . 39/6 each.

Obtainable from all Wireless Supply Houses.

Sole Australian Agents

O. H. O'BRIEN & NICHOLL (SYDNEY).

Phones: City 3302, 10592.

37-39 PITT STREET, SYDNEY.



**HINTS FOR BEGINNERS**

(By C. M.).

This article is intended to help the beginner over some of the problems he meets in making and operating his first set.

Such a set generally consists of the aerial, a coil or loose coupler, a crystal, a single receiver or pair of phones and the ground system. No more apparatus than this is necessary, not even a condenser, but for successful working the instruments must conform to certain requirements, for instance:—

(1) The telephone receiver must be of the high resistance type. A receiver from an old land line telephone is no good at all. Do not bother with rewound phones either, but buy a new one that is guaranteed to have 1,000 ohms resistance. The phones are a most important part of the receiving set, and you will never regret money spent on a good pair of well-known make.

(2) For a crystal use silicon, which is recommended above galena for the beginner, because it does not break up readily in the clamp, is much more easily adjusted, and holds its adjustment better. The crystal must be firmly clamped in a metal holder, a clip of springy brass is quite good. The wire resting on it must be very fine, and must press very lightly. Crystals should be handled as little as possible, and covered when not in use to keep the surface absolutely clean.

(3) For a coil the loose coupler is recommended. It is not much harder to construct than the single coil tuner, and is greatly superior in tuning qualities, and in every way. The diameter of

the inner sliding coil should not be more than an inch less than that of the outer coil, or there will be too much space between them. The aerial and ground are connected to the outer or primary coil, and the instruments to the inner or secondary coil. The number of turns on the primary should be variable one at a time.

With the average aerial and a primary of three or four inches in diameter, from twenty to thirty turns will be about right to tune the commercial stations on six hundred metres. One or two hundred turns will be necessary on the secondary. With a smaller or larger aerial the turns on the secondary will be the same, but the turns on the primary more or less, respectively. The slider is often responsible for much trouble, so be sure it makes good contact with the turns. The tuning is done chiefly by sliding the inner coil in or out of the Primary. An occasional variation of a turn more or less may be necessary on the primary. The connections must follow the diagram exactly. Bare wires must not touch, of course, nor should they be touched by the fingers of the operator. The flexible leads to the telephones should be twisted together.

(4) The aerial: A single copper wire strung from a tree or any other high object as high as possible (not less than thirty feet) and one hundred feet or more in length makes an excellent aerial. It should be kept clear of any other elevated structure, particularly electric power lines.

(5) For a ground solder a wire to the nearest water pipe. If there is any difficulty about soldering clean the pipe, and screw a clamp (obtained from any wireless shop) on it. If water is not

laid on carry the ground wire to a well or to some place where the ground is always damp, and make connection to an iron pipe in the wet ground.

The best time to listen in for signals is between seven and twelve p.m., when there is most certain to be something being within range of your set. The average set, as considered above, should have a range of five hundred miles or more for the powerful land station transmitters in Australia, less than that for boats and up to ten or fifteen miles for concerts, according to the power being radiated.

**MAGNAVOX RADIO.**

The Rolls-Royce of reproducers.

The one loud speaker which will reproduce music and signals in any volume without distortion and without injury to the apparatus.

Dispense with the Head-Phone

AND LET EVERY ONE IN THE ROOM HEAR.

A BIG DEMAND HAS BEEN CREATED.

BE SURE OF GETTING ONE.

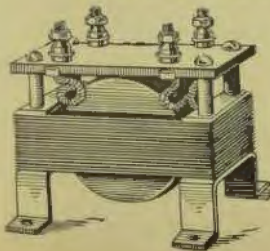
Call, write, or phone,

MAGNAVOX, AUSTRALIA,  
17, THE BANKERS HOUSE,  
228 PITT STREET SYDNEY.

Phone: City 4710.

**INTERVALVE TRANSFORMER.**

CLOSED CORE—FOR AUDIO FREQUENCY AMPLIFICATION.



This Transformer, which is scientifically constructed, is of the absolute type. It is simple, reliable and compact. Maximum results are assured. Complete measurements of this Transformer are 2 1/2 x 1 1/4 x 1 3/4 in. It is provided with feet in order that it may be mounted in any desired position.

Price - 45s.

Postage 6d.

**HOMECRAFTS** Melbourne  
P.H. McELROY  
211 SWANSTON STREET



## ❖ REGENERATION. ❖

Regeneration, briefly, is a method of securing amplification with a single tube, by coupling the output of the bulb back to the grid in such a manner that it intensifies the slight potential applied to it by the incoming wave, the strength of which determines the audibility of the signal.

An incoming signal is impressed on the grid of the vacuum tube as a certain variation of a positive or negative charge, and by either repelling or attracting the electrons flowing from filament to plate, it varies the strength of the plate current. The plate or space current passes through the receivers, or the primary of an amplifying transformer, the high voltage battery, and finally across the elements of the tube. As the changes are thus caused by grid variations, it holds that the grid and plate fluctuations occur practically simultaneously, the change in the plate current being, in fact, nothing more than an intensified replica of the grid variations. Thus, if a part of this energy is the plate circuit is properly transferred back to the grid circuit, it will augment the like variations there, with a resulting greater change in the space current. This again reacts on the grid, and regeneration may be continued up to a certain point at which the circuit is said to oscillate. (The ultra amplification in the Armstrong super-regenerative set is secured by carrying out this feedback principle considerably further, and effecting regeneration far past the stage at which conventional receivers commence oscillating).

Regeneration may be obtained in either of two ways—by inductive or by capacitive feed-back, each system functioning, as its name implies, by the respective means of inductance and capacity.

Inductive feed-back is the simpler system, and its action more easily understood. It consists of a coil or inductance in series with the plate battery and phones, coupled to another coil in the grid circuit, generally the secondary of a vario-coupler or its equivalent.

Any receiver can thus be made regenerative by the installation of a "tickler" system, built up in the form of a small variometer with no electrical connection between the rotor and stator. Two cardboard tubes should be secured, one, the stator, approximately three and a half inches in diameter, and the second, of such a size, about three inches, that a one-inch length of it will turn within the stator. Ten turns of any convenient insulated wire is wound on the stator, and twelve turns on the smaller tube, the rotor. The experimenter may mount the tickler as his ingenuity suggests, but a switch knob, minus the lever, and a bushing, probably afford the simplest method.

In any circuit, one coil, generally the stator, is connected in series with the grid condenser on the A battery side, and the remaining coil, between the receivers and the plate.

Tuning is effected in the usual manner after having first set the coils at right angles to one another. When the station is tuned to maximum loudness, the tickler is brought into play by turning the rotor in the correct direction (to be determined by experiment). As this is done, the signal strength will increase until just before the circuit oscillates, beyond which point reception will be distorted and unsatisfactory. (Except for continuous-wave—C. W.—signals, which are most commonly received on an oscillating set).

The tickler unit just described will give regeneration over a range of wave-lengths up to six hundred meters, above which, larger coils must be made.

Regeneration by capacitive feed-back finds its most popular modification in variometer sets, where it is accomplished through the capacity between the grid and plate elements of a vacuum tube. However, as is easily understood, the capacity between these parts of a vacuum tube is very small, and to achieve an appreciable transfer of energy requires very careful adjustment of the two circuits—an adjustment that is ef-

fectured by the variometers. Efficient transference of energy from one circuit to another is possible only when the two circuits are in resonance, or tuned to the same wave. Variometers, which are from stations which are operating continuously variable tuning units, make it theoretically possible to arrive at this ideal condition.

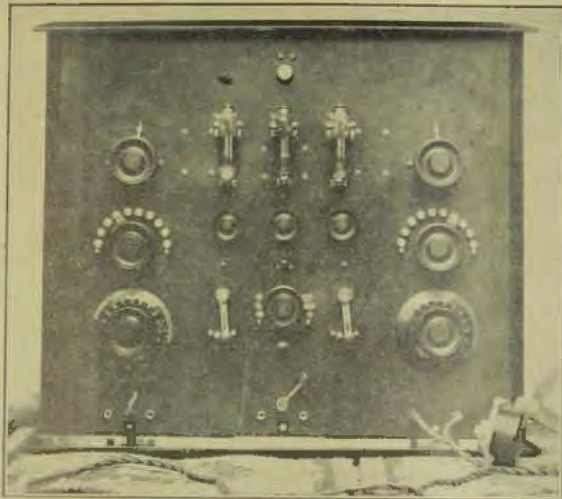
This last type of regenerative set is the most efficient short-wave receiver, because, on higher frequencies (short waves), resonance plays a much more important part. Due to the variometers, complete resonance is sustained throughout the set, from the antenna through the plate circuit, thereby utilizing to the utmost the barely perceptible current of the incoming signal, as well as gaining an initial amplification by regeneration.

Two small variometers may be wound in the manner described for the construction of the tickler unit, except that the rotor and stator are connected, leaving only two open wires from each variometer. These variometers may be added to almost any non-regenerative set, by connecting individual variometers in place of the rotor and stator coils indicated in the tickler hook-up (i.e., one variometer in the grid circuit, and one in series with the telephone receivers).

Tuning with a variometer set requires considerable practice, but once the operator becomes accustomed to the peculiarities of his apparatus, the remarkable reception will repay him for his efforts. The grid variometer will require certain definite settings for different wave-lengths (which must be determined by trial), and should be first set on the wave adjustment for the signal it is desired to receive. The plate variometer is set at any non-oscillating position, and the station tuned by varying the antenna condenser or inductance. When the station is tuned in, generation is controlled by manipulating the plate variometer. The final adjustment is a very delicate tuning of the grid variometer.



AN AMATEUR'S SET.



MR. F. THOMPSON'S SET. Photo by W. Bird

The above set was built by Mr. F. Thompson, call 2 H.F. It comprises five valves, using a Telefunken as H. F. Amplifier, Audiotron as Detector, and 3 V 24s as Audio Amplifiers. Tuning is by 2 expansive Honeycomb coils, varied with Murdoch condensers.

Each valve has separate filament control. There are no terminals on the panel. Gibson patent plugs being used.

By using 2 radial switches and 1 telephone switch, combinations as follows may be used:—1 detector, 1 A.F. detector, 1 H.F., 1 detector and 3 audio, or 1 detector and 3 audio. Using Brown's 2,000 ohm phones, Mr. Thompson can copy Suva, Perth and Awanui.

It will be seen by the illustration that Mr. Thompson's set is most compact, and a credit to any amateur experimenter.



Back View of Mr. Thompson's Set.

"HONEYCOMB" COILS.

Many experimenters are under the impression that "Honeycomb" coils are not efficient. This can be attributed to the fact that they have had sufficient patience or that they possibly do not understand the principle of tuning. The De Forest type of DL "Duo-Lateral" wound coils may be used as

MODELS.

DYNAMOS. Small 30, 60, and 120 Watt machines. Finished or in machined parts.

LIST A. 3D.

O. BURNABY BOLTON,

Daily Telegraph Building,

KING STREET, SYDNEY.

tuning, loading, wavemeter or choke coils exactly as are any other radio inductances having a fixed value. Each coil is provided with a plug that fits into a receptacle on a Honeycomb Coil Mounting, this mounting takes the place (for tuning) of the "Loose-coupler". A new type of spring contact is now used on these plugs to make a perfect contact. Condensers or variometers in series or parallel with the coils provide means of accurately tuning the circuits to the desired wavelength, and if when using one set of coils it is desired to receive stations whose wave-lengths are beyond the range of the condensers, larger coils are plugged in. The "DUO-LATERAL" winding differs essentially from the older type of Honeycomb winding in that the wires of alternate layers are not laid directly above one another, but are so arranged that parallel wires of alternate layers fall in between those of the preceding and following alternate layers. The turns of one layer always cross those of the preceding layer at an angle. The two features reduce distributed capacity to the lowest possible minimum.

With an average aerial of .0007 mfd. capacity, Primary Condenser of .0015 mfd. capacity and a secondary condenser of .001 mfd. D.L. Coils will respond to the various wave-length ranges shown below.

The Burgin Electric Co. are handling both Honeycomb and Duo-Lateral Coils and guaranteed them both.

Honeycomb Coils Suggested for Usual Wave Length Ranges.

Type of Service	Wave Length Range (Meters)	Primary Coil	Secondary Coil	Primary Condenser (Primary)	Condenser (Primary)
Amateur	150-355	DL-25	DL-50	DL-50	Series
Special Amateur	105-210	DL-100	DL-20	DL-100	Series
Commercial	465-1050	DL-150	DL-100	DL-150	Series
Navy Calling	535-1050	DL-250	DL-150	DL-250	Series
Arlington Time	1750-4100	DL-300	DL-200	DL-300	Series
Navy Station Arec	1650-8450	DL-1000	DL-500	DL-1000	Series
Foreign and Press	6000-12500	DL-1500	DL-1000	DL-1500	Series
Foreign and Press	12000-20000	DL-1000	DL-1500	DL-1000	Shunt
Foreign and Press	16000-25000	DL-1500	DL-1500	DL-1500	Shunt



MAKE YOUR OWN.

ELECTRIC CONDENSERS.

THEIR ACTION, USE, CAPACITY AND CONSTRUCTION.

An electric condenser consists essentially of two bodies of metal (or other electric conductor) between which is an electric insulator or dielectric. Referring to Fig. 1, A and B represent the metal plates of the condenser, and C a sheet of dielectric material (say, glass or merely air) between them. If at first the plate B be removed to a distance, the plate A can receive a certain charge of, say, positive electricity from an electrical machine of the Wimshurst or similar type, or from the positive terminal of the positive main of an electric lighting network. If now the plate B be brought up as shown, the positive

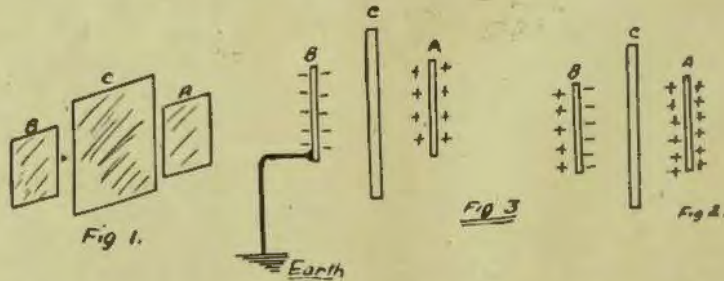
If the plate B be connected to earth, the repelled positive charge on the plate can escape, and the whole of B being available for induced negative charge (Fig. 3) the capacity of the combination is further increased.

Electric condensers find a number of practical applications. They are often connected across make and break contacts as in spark coils, in order to store temporarily energy, which would otherwise be expended as a spark burning the contacts.

Condensers are used in wireless receiving circuits chiefly for tuning, that is, for controlling the frequency at which currents may oscillate. For tuning purposes, they are usually made continuously variable, but for other uses (e.g., Grid Condensers and Telephone Condensers) they are gen-

erally of fixed value, and are often termed blocking condensers, for the reason that they serve to by pass high frequency currents or to develop a difference of potential between their plates when in oscillating current circuits. Blocking condensers are connected in circuits where it is necessary to offer a path for high frequency currents to obviate the necessity of their having to pass portions of the circuit offering high impedance to their passage.

a certain difference of electric pressure exists between its two conducting plates. This capacity depends on the area of the latter, on the distance which separates them, and on what is termed the "specific inductive capacity" of the insulating material between them. The plates A and B (Fig. 1) form a condenser of certain capacity when only air is between them. If the intervening space be filled with paraffin wax, all other conditions remaining the same, the capacity will be nearly doubled, while the capacity may be increased from 3 to 10 times by using glass of various kinds. For use in portable apparatus and other cases where space is limited, condensers are generally made by building up a multiple sandwich of tinfoil (this is not essential, as other metals such as copper and



charge on A attracts negative electricity on B nearest to A, and repels positive electricity to the back of B (as indicated in Fig. 2).

At the same time, the positive charge on A is attracted to the inner face of the plate by the negative charge on B, and thus more room is made for positive charge on A, in other words the electric charge is condensed (hence the name condenser), and the capacity (for electricity) of the condenser combination is greater than that of the single plate A.

erally of fixed value, and are often termed blocking condensers, for the reason that they serve to by pass high frequency currents or to develop a difference of potential between their plates when in oscillating current circuits. Blocking condensers are connected in circuits where it is necessary to offer a path for high frequency currents to obviate the necessity of their having to pass portions of the circuit offering high impedance to their passage.

The capacity of a condenser is measured by the quantity of electricity which it will absorb when

zinc foil may be used) and mica sheets. Alternate metal sheets protrude to the right and left of the insulation, and are subsequently connected together. In effect we have then two very large metal sheets placed very close together, and thus forming a compact condenser of large capacity.

Now in order to find the capacity required, or, conversely, the area of foil required, we employ the well known formula:—

$$C = \frac{4 \times 3.1416 \times 10 \times 9 \times t}{K \times A}$$



Where C = capacity in microfarads (μF).

Where K = Dielectric constant (see tables).

Where A = the effective area of plates in square centimetres.

Where t = distance apart of plates, i.e., dielectric thickness in centimetres.

Where Dielectric constants (this being K in the formula).

Where air = 1.

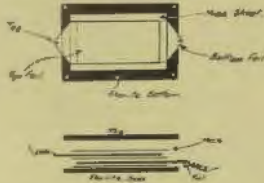
Where Paraffin Wax = 1.9.

Where Ebonite = 4.

Where Flint Glass = 6-8.

Where Ruby Mica = 8-12.

To prepare small condensers, first of all procure two pieces of 3-inch ebonite, which should be smooth, but not polished, and at least 1/4 inch larger all round than the condenser it is proposed to construct. Should it be necessary to remove the polished surface from the ebonite sheet, this can



be readily done with the aid of fine flour emery mixed with a little oil.

Care should be taken to dry the surfaces thoroughly before pressing them into service. At the four corners a small hole should be drilled and tapped to take a set of four screws whereby the condenser is held together. Two pieces of 0.002 inch mica sheet should now be cut, each piece 1/4-inch less in size all round than the corresponding ebonite sheet, and also 1/4 inch more in size all round than the actual size of the plates. The two plates having been cut so as to conform with the required capacity, and having tags 1/4-inch long at one end should now be prepared from copperfoil. One sheet of mica should be placed in position on the ebonite and secured by a little shellac varnish (i.e., shellac dissolved in methylated spirit). One of the copper foils is next laid on so that its tag projects over the end of the mica, and another piece of this latter substance of the same size as the first, is now laid upon the foil.

Number two foil is then placed upon the mica in such a way that its tag projects from the opposite side of the condenser to the first one, and another sheet of mica, dimensioned as before is laid upon it. The top ebonite portion may now be placed in position, and the four screws inserted and tightened up.

(Fig. 4) Showing Construction of Small Fixed Condenser.

Connecting wires may be readily placed to the projecting tags.

A table, giving particulars of condensers of different values, is given here and will no doubt prove of use to the amateur.

Approx. Capacity.	Area of No. 1 Foils.	No. of elec. Foils.	Dielectric.	Dielectric Thickness.	K =
0.0005 μF	1/2 x 1 3/4	2	Mica	0.002	K = 8
0.001 μF	2 x 1 3/4	2	Mica	0.002	K = 8
0.002 μF	1/2 x 1 3/4	5	Mica	0.002	K = 8
0.003 μF	2 x 1 3/4	5	Mica	0.002	K = 8
	1/2 x 1 3/4	11	Mica	0.002	K = 8

### KEEPING PACE WITH THE TIMES.

W. Harry Wiles established his business of Electrical Supplier and Engineer in 1904, and by steady growth with the Electrical Industry, he has kept pace with the times, and his window displays and show rooms are a source of interest at all times to those interested in Electrical Apparatus. His motto is "Everything Electrical," and he has now added a Radio Department. His Quality Radio Apparatus, which we had the opportunity of inspecting, covers a very large range of both imported and local manufactured lines. As he is known for his straight, forward dealing, he can be expected to be one of the leaders in the Australian radio field.



## RADIO SETS and Parts to make your own

Send for Price List.

ELECTRICAL UTILITIES SUPPLY CO.  
RADIO HOUSE  
605 GEORGE STREET, SYDNEY.

## Get Your Wireless Gear at ELECTRICITY HOUSE

387 GEORGE STREET (OP. STRAND). TEL. 2961 CITY

Condenser Plates, 2/- per doz.; Condenser Spindles, 2/9 per set; Condenser Ends, 1/9 pair; Honeycomb Coils, from 3/6; Honeycomb Mountings, 3/- each; Filament Resistances, 7/6 each; Calibrated Dials, 1/6 each; Knobs, 1/6, 2/-, 2/6 each; Contact Studs, 1/9 per doz.; Switcharms, 3/-, 4/6; Terminals, 6d. each; Phone Condensers, 1/6; Grid Condensers, 1/6; Variable Condensers, 25/-, 30/-.

Murdocks Phones, 37/6; Myers Valves, 35/-.

Catalogues, 6d. each including wiring and other diagrams. All makes of Telephones and Valves.

Crystal Cups, 1/-; Detectors, 5/- each; Loose Couplers 45/-; Cabinets, Ebonite, Bakelite and all round materials.

INTERVALVE TRANSFORMER, 40/-.  
Closed Iron Core.

Works Manager: RAYMOND McINTOSH.  
Shop Manager: RAYMOND SHAW.  
General Manager: J. S. MARKS.

All communications to the Firm.



**50 YEARS**

IN THE FOREFRONT

of everything electrical is your assurance that

**Western Electric  
RADIO APPARATUS**

will give you the best results.



Our desire is that you take advantage of this unique experience. If your regular radio dealer is unable to give you full Western Electric service do not hesitate to apply direct to us. You want the best results—then you must have "Western Electric" Equipment.

**WESTERN ELECTRIC  
COMPANY (AUST.) LTD.**  
192 Castlereagh St., Sydney.  
(A few doors from Park Street).

Anglo-American Book Shop.

**WILLIAMS AND SON**  
(late Hallams).  
Q.V. BUILDINGS  
459 GEORGE STREET,  
SYDNEY.

All the Latest Wireless Books and Magazines in stock, posted anywhere

**RADIO AVERTS A  
BATTLE.**

Just as the British forces were on the point of opening fire on the advancing cavalry of the Turkish Nationalists (which had just occupied Kum Kalesi in the neutral zone), and thus precipitated what in all probability would have been another war, Col. Shuttleworth, of the British forces in Chanak received a radio message from General Harington in Constantinople that gave orders to suspend the attack. Under a flag of truce the representatives of the two conflicting forces parleyed—and the impending battle was avoided.

The radio station located in the Eiffel Tower is affecting the toy industry of France, according to M. Lepine, former Prefect of Paris. Little Pierre has lost interest in his tin soldiers and even in his scooter, and is now saving his centimes for a miniature radio set.

Now that the Prince of Wales has joined the ranks of the radio fans and has had a set installed at Windsor Castle, high society in England may no longer hesitate to accept the new art as *de rigueur*. It is even rumored that the Prince has so interested the King and Queen in radio that receiving apparatus may be installed at Buckingham Palace.

Unable to dispose of an old house in Dallas, Texas, an enterprising real estate operator installed the very latest radio receiving set in it, and so advertised in the leading paper. From the dozens of offers that poured in he selected one that enabled him to dispose of the property at a good price.

**NEW RADIO BOOKS**

- Lessons in Wireless Telegraphy, by Morgan, 2/9 Posted.
- Experimental Wireless Construction, by Morgan, 2/9 Posted.
- The Construction of Amateur Valve Station, by Douglas, 2/3 Posted.
- Crystal Receivers, for Broadcast Reception, by Harris, 2/3 Post.
- Wireless for All, by Scott-Taggart, 11d. Posted.
- Wireless at Home, by Donisthorpe, 9d.
- Mast and Aerial Construction for Amateurs, by Ainsley, 2/3 Post.
- Plans and Specifications for Wireless Telegraph Sets, by Collins, 2/3 Posted.
- Auto-Time Morse System, by Perry, 10d. Posted.

**N.S.W. BOOKSTALL CO.  
LIMITED**  
476 George Street

"THE BEST THAT MONEY CAN BUY."

**De Forest Radio Equipment.**

Our Reputation is built on quality and service.  
ALL B. E. C. APPARATUS IS OF THE BEST.  
CALL AND see our B. E. C. Honeycomb coils, all ranges.  
Another shipment of Murdock Headphones 30/-.  
Variable Condensers from 27/6, Rheostats 7/6.  
CONTACT STUDS with nut, 1/3 doz. terminals, 5d each.

**BURGIN ELECTRIC COY.**  
352 KENT STREET, SYDNEY.

Tel: City 141.  
WIRELESS SUPPLIES.



February 9th, 1923

WIRELESS WEEKLY

9

OUR RADIO YARN.

## THE RADIO FAN.

By Q. T. C.

Jack Potts had married well, left his clerkship, and after a protracted tour of Europe and America decided that Australia was good enough for him, and landed back in Sydney. A swanky bungalow, landscape garden and a fouring car awaited him and his wife, Marion, on their return. Nothing was desired but a speedy re-entrance into society. "Yes, let's have a reception," agreed his wife; "where we can meet all our friends again, and have a good talk over old times."

"Well, my dear, you arrange about the guests, but do let's have some responsible people who can talk and exchange ideas."

"Well, we must cut out the young flappers," rejoined his wife, "and ask them on another evening."

The list prepared, the eventful re-appearance into society was soon forthcoming.

After dinner, Jack strolled amongst his guests, making himself agreeable.

"..... and she works well in a small plate current, about twenty-five," Sir Joseph was saying.

"What re-action coils do you use?" queried Rev. Mark Mellan. "I always get amal on 350."

"That's O.K. for most purposes," replied Sir Joseph.

Jack scratched his head. "What was it?"—Cars, cookery, medicine, all flashed through his brain.

In another corner of the reception room, a mild flirtation was being carried on by Miss Waggs and Joe Scraggs.

"My catwhisker was too springy," Joe was remarking, "so I used a piece of bare No. 40 on Galena, and got excellent 'sigs.'"

"How clever," murmured Miss Waggs.

"I wound my inductances myself, and even made my own condensers."

"Oh, really," echoed Miss Waggs.

John Hanlon, a city merchant of standing, noted for his keen business acumen, was sucking an expensive cigar and discussing in evident earnestness the relative values of OX and Radiotron valves with Mrs. Burke Smythe. The Radiotron was having a good time when Jack rolled up.

"Well, Jack, what's your opinion? We have been discussing valves."

Jack was taken aback, and confessed his ignorance, and listened to a long discourse on plates and filaments, A & B batteries, but finding himself and his ignorance "de trop" finally escaped to his wife.

"Whatever have we struck, Marion?"

"I am sure I don't know, Jack. I have been over with Mrs. Piers-Jones and Mrs. Bruce-Webster, and I can hear nothing but radio, broadcasting V.I.S., whatever that means, and I am sure they are all crazy."

Jack moved on.

Wherever he walked they all seemed to be stricken with the same fad. He heard stray pieces of many conversations—"Annaka takes four on the filament and twenty-four on the plate." "I heard Mac in a single valve all over the room." "I wish Amal would send more often." "I always make my own condensers." "This is a good formula for the co-efficient of self induction."

Meanwhile, Marion was receiving some late arrivals.

"So sorry, my dear," Sophie White was saying; "but I have just left my set in such a muddle, and the valve burnt out. I was almost in tears. 'What valve do you use?'" chimed in Frank. "Bustratie! Why don't you use an Expense See?"

"I hardly think that Jack has benefited very much by his trip away," remarked the Rev. Mark Mellan, as he stepped into John Hanlon's car at the end of the evening. "Fancy travelling in England and America, and not bringing back a radio set."

"Yes," agreed John Hanlon; "but I suppose he was too busy love-making."

Jack himself was sorely perplexed as his guests left. Marion was in tears. "Our first dinner party, Jack dear and such a frost," was the burden of her complaint. "They talked about those horrid radio things all the evening, and I am heartily sick of the nasty creatures. Oh well, dear, I suppose we must get a radio set and be in with the crowd. But I certainly won't go mad about it," he added.

Some few days later, Jack arrived home with a crystal set, and little time was lost in erecting an aerial and obtaining a license. It was a timid Marion who "listened-in" with her husband. A radio friend had willingly agreed to assist in setting up the set, and at 8.30 p.m. the first noise of V.I.S. sending his weather report came in. Jack's eyes glistened, and enthusiastically turning to his wife, "My word, dear, how wonderful!"—to his friend, "and can you really hear concerts on that thing?" "Oh, yes," was the reply; "when amal likes to send, they are rather slow to-night."

"Amalgamated Wireless speaking, Amalgamated Wireless speaking"—a long pause. The first record will be—da der da der da—der der der da—der der—der der."

Soon, however, strains of music filled the receiver and delighted the listeners. "My word, this is fine," was the only comment from Jack and his wife.

Some weeks after, Jack could be heard exchanging ideas on capacities, loose-couplers, variocouplers, and valves with John Hanlon and his coterie of radio friends, and it wasn't long before Jack entertained his friends with a new three-valve amplifier and loud speaker.

The radio bug had bitten him as hard as it bites all of us.





**ILLAWARRA RADIO CLUB.**

What was perhaps the most auspicious meeting of the Illawarra Radio Club to-date was held at the Club-room on 1st February. The special lecture set down for the evening attracted a large attendance, both of members and visitors, resulting in the Club-room being well filled.

After Minutes were confirmed and new members elected, Mr. J. G. Reed (Radio Engineer, A.W. Ltd.) delivered his lecture on "Short Wave Transmitters and Receivers." In opening, he said it was not until recently that any very serious consideration had been given by experimenters to the lower wave-lengths, comparatively all experimental work having been done on wave-lengths of from 600 metres upwards, but with the advent of the new Regulations (which confined experimental transmission to much lower wave-lengths) a closer study of the factors involved in short wave transmission was necessary. He spoke of aerials and their capacities, and the relative advantages of different types, and their efficiency with regard to situation and surrounding objects was explained. It was shown how a tuned counterpoise used in conjunction with an aerial would give maximum efficiency, and certainly much greater radiation than when the ordinary earth was used. A very useful table was here given for determining the capacity of single wire aerials of given height and length.

Various transmitting circuits were shown, giving the values of the different capacitances, inductances, resistances, etc. employed, and the general operation of the circuits described.

Another interesting phase touched on by the lecturer was that of harmonics, which, he said, were very prevalent in short wave transmitters, and their cause and peculiar effects were mentioned.

It was shown how interference often caused by harmonics could be overcome.

Rectification was next dealt with, the electrolytic and valve systems of rectification being fully explained, and the functions of the component parts employed in both systems described in detail. The effective use of filter circuits and choke coils as a means of cutting out the A.C. hum was shown. The lecturer gave details of construction of various forms of choke coils and transformers used.

With regard to receivers, Mr. Reed stated that as only small variable inductances were to be used in short wave work, capacity must be kept down to a minimum. Here again many receiving circuits were drawn and their operation explained, including the famous "Armstrong Super-regenerative Circuit." Amplification of short waves by the radio-frequency, audio-frequency and resistance-coupled amplification methods were also considered. Hook-ups were shown for making one and two valves perform the functions of three.

Mr. Reed answered very clearly the various questions which were put by members. Throughout the lecture, innumerable circuits and diagrams were given on the board, as well as a great deal of constructional and other detail, and on the whole a wealth of solid practical information was dispensed; all of which was especially valuable at the present time, and was greatly appreciated by members, as shown by the profuse note-taking indulged in.

At the conclusion of the lecture the President (Mr. Cuthbert) spoke in appreciative terms of Mr. Reed's kindness in visiting the Club, and the excellent manner in which he had dealt with such a comprehensive subject, which would be of invaluable assistance to the members, and he called for a motion of thanks. Mr. Hewett in moving a hearty vote of thanks to Mr. Reed, had much pleasure also in proposing him as an honorary member of the Club; this was seconded by Mr. Atkinson and carried by acclamation. Mr. Reed in responding thanked the Club for the cordial reception which had been given him, and hoped to be able to visit the Club on many future occasions.

The next Meeting of the Club will be held at the Club-room, 75

Montgomery Street, Kogarah, on Thursday, 15th February, at 8 p.m. A lecture on "Crystals" will be given by Mr. Watkin Brown, which promises to be very interesting. A cordial invitation to be present is extended to members and others interested. The Secretary (Mr. W. D. Graham, 44 Cameron St., Rockdale) invites inquiries concerning the Club.

**NEWCASTLE & DISTRICT RADIO CLUB.**

This Club was formed on the 13th October, 1922. The Club has made a great start, and is making great progress.

The Club meets every Wednesday (8 p.m.) at the Club room, 25 Winship St., Hamilton.

We have 60 members on the roll, and they are still joining up every meeting. We also have ten members on our committee. A wireless exhibition was held on the 10th January last, and it was surprising to see the exhibits made by club members.

At our last meeting, held Wednesday, 24th January, Mr. Stanfield, a club member, gave a very interesting lecture on volt and ampere metres.

Mr. Jerome was thanked for his donation of 10/- to the club, also Mr. Pogonoski (the printer) for a donation of advertisement cards.

The aerial has been erected, it being the inverted L type, twin wire, 170ft. long and 50ft. high. It is situated on top of Cameron's Hill, Hamilton, with the club-room beneath.

Mr. Metham, a club member, has lent his valve-receiving set to the club until the club's own set is installed.

The club is making application for a transmitting licence. This granted, the club intends treating all suitable apparatus to radio concerts, providing Billy Hughes has no objection.

**THE NORTH SYDNEY RADIO CLUB.**

At the North Sydney Radio Club a Committee Meeting was held for the purpose of compiling the syllabus for the ensuing month.

A very attractive programme has been arranged, and the lec-



February 9th, 1925

**WIRELESS WEEKLY**

11

ture upon "Methods of using the Valve as an Amplifier," to be delivered by Mr. Raymond McIntosh on the 27th inst., should attract a large crowd.

Mr. C. Lisle, who for some months has been on a visit to England and the Continent, was seen at the clubrooms for the first time since his return last week, and it is expected that the club will benefit considerably by his experience of the developments and conditions with regard to amateur radio on the other side.

The next meeting will be held next Tuesday night, when Mr. C. McClure will lecture upon "C.W. Receivers," and a cordial invitation is extended to all those interested to be present.

**LEICHHARDT & DISTRICT RADIO SOCIETY.**

At the Fourteenth General Meeting of the Leichhardt & District Radio Society, held at the Club Room, Victory Hall, rear of Methodist Church, Johnston St., Annandale, on Tuesday, January 30th, the first portion of a lecture on the subject of Inductance was delivered by Mr. William J. Zech, who was accorded a vote of thanks by acclamation.

Later, members entered into a general discussion on the question of the erection of an aerial on the Society's premises, and many useful suggestions were put forward and adopted.

The next meeting is to be held on Tuesday night next, when all interested are invited to be present.

All inquiries should be addressed to the Hon. Secretary, Mr. W. J. Zech, 145 Booth St., Annandale.

**MARRICKVILLE & DISTRICT RADIO CLUB.**

The members of this club held their meeting last Monday. The meetings, which are held every Monday at 8 p.m., are being well attended. Practical demonstrations, lectures, discussions, and buzzer practice are the features of each meeting. A practical demonstration of a two-valve set, made by a member of the club, was given.

The club room is situated at The Congregational School Hall, Perry St., Marrickville.

**BALMAIN DISTRICT RADIO SOCIETY.**

**DR. STOPFORD, PRESIDENT.**

This society is making steady progress. The membership is increasing each week.

At our last meeting, Wednesday, January 31st, our receiving instruments worked excellently, and long distance signals were received quite easily.

We hope shortly to have our transmitting license. This society is singularly fortunate in having a technical committee of men who have practical experience.

The secretary will be pleased to give any information relating to membership, etc.

Address:  
77 Grove St.,  
Balmain.

Telephones: City 8892,  
W-1126.

**CAMPSIE & DISTRICT RADIO CLUB.**

The Third General and Business Meeting of the Campsie and District Radio Club was held at "Loch Vennachar," Evaline St., Campsie, on Monday 29th inst. There was a very good attendance, four new members being enrolled. The discussion for the evening being the Club's sets, which is to be a

crystal, and is to be made by the members. A single valve set is to be gone on with later. A twin inverted L aerial is to be erected as soon as permission is obtained. The Club has now two lady members, and it would like to see others take an interest in the science also.

All inquiries as to membership and to the Club's activities should be addressed to the Hon. Sec., W. Hughes, "Loch Vennachar," Evaline St., Campsie.

A special meeting will be held at Star-Bowkett Hall, on Friday, 9th inst., at 7.45.

**WIRELESS GOODS**

At City prices.

Valves, crystals, sliders, etc.,

**P. L. Stonwall & Co.,**

83 King St., Newtown.

G. Calvert, Wireless Manager.

Phone: L-1198.

**SALE. SALE. SALE.**

Now is the Time to get that Electrical Gadget.

I AM CLEARING OUT ALL MY SLIGHTLY USED & SECOND-HAND TOYS, DYNAMOS, MOTORS, ETC. AT RIDICULOUS PRICES.

THESE GOODS ARE ALL GUARANTEED IN GOOD ORDER, AND PRICES ARE CHEAPEST IN TOWN.

SEE MY WINDOWS FOR BARGINS, SOMETHING FOR ALL.

LAMPS AT 1/3 EACH; IRONS, 240V.,

6lb., CORD & PLUG, 20/- EACH.

**O'SULLIVAN'S ELECTRIC SHOP,**

296 PITT ST. SYDNEY (Opp. W. & S. Board)



AMATEUR CALLS

VICTORIA.

The following is a list of licenses issued to amateurs in the State of Victoria to the end of November, 1922:—

Call Signal	Name.	Address.	Nature of Licence.
3 J U	Hull, R. A.	38 Charnwood Road, St. Kilda	T.
3 I U	School of Mines	Bendigo	T.
3 I V	Jool, H. A.	69 Pascco Street, Willamstown	R.
3 I W	Syme, A. K.	62 Middlesex Road, Surrey Hills	R.
3 I X	Huston, G. F.	Martin Road, South Camberwell	R.
3 I Y	Brittiebank, T. B.	Agricultural High School Farm, Warrnambool	R.
3 I Z	Mitchell, R. E.	67 Greville Street, Prahran	R.
3 J A	Brighton, E. W.	90 Collins Street, Northcote	R.
3 J B	Matthews, E. G.	Stirling Crescent, Surrey Hills	R.
3 J C	Scott's College (J. W. Sweeney)	100 Russell Street, Melbourne	R.
3 J D	Williamson, S. T.	74 Molesworth Street, Nth. Melbourne	R.
3 J E	Morris, H. K.	142 Flinders Lane, Melbourne	R.
3 J F	Hargreaves, J.	1 Fallon Street, West Brunswick	R.
3 J G	Van Pelt, S.	27 Stirling Street, Footscray	R.
3 J H	Geelong, C. of E. Grammar School (Dr. Brown)	Corio	R.
3 J I	Garrott, H. W.	315 White Horse Road, Box Hill	R.
3 J J	Crerar, D. C.	15 Moore Street, South Yarra	R.
3 J K	Semmens, J. B.	Woolton Avenue, Northcote	R.
3 J L	Bull, D. G.	61 Collins Street, Melbourne	R.
3 J M	Bryson, R.	149 Eglinton Street, Kew	R.
3 J N	Thornton, G.	4 Albert Street, Surrey Hills	R.
3 J O	Higgins, J.	37 Ackland Street, St. Kilda	R.
3 J P	Michell, H.	Kean Street, Caulfield	R.
3 J Q	Paul, L. A.	137 St. George's Road, Nth. Fitzroy	R.
3 J R	Dunstan, W. J.	7 Cameron Street, Ballarat East	R.
3 J S	Welch, J.	30 Murrumbeena Road, Murrumbeena	R.
3 J T	Sandford, E. H.	30 Campbell Road, Canterbury	R.
3 J V	Middleton, C. P.	47 Chaucer Street, Canterbury	R.
3 J W	Chessell, J.	42 Windsor Crescent, Surry Hills	R.
3 J X	Chapman, H.	9 Ivanhoe Parade, Ivanhoe	R.
3 J Y	Shields, R.	220 Glen Elira Road, Elsternwick	R.
3 J Z	Whalley, R. P.	"Enmore," Bridge St., Sandringham	R.
3 K A	Morrison, R.	26 Belford Road, East Kew	R.
3 K B	Straford, P. W.	15 McHenry Street, East St. Kilda	R.
3 K C	Powell, A. L.	Sir Garnet Road, Surrey Hills	R.
3 K D	Evans, T. E.	21 Brunswick Road, East Brunswick	R.
3 K E	Dickie, L. J.	"Orvieto," Nicholls Road, Ormond	R.
3 K F	Rogers, L. C.	14 Grieg Street, Seddon	R.
3 K G	McEwan, J. G.	14 Balmoral Crescent, Surrey Hills	R.
3 K H	Forde, H. J.	505 Mt. Alexander Rd., Moonee Ponds	R.
3 K I	Curry, B.	112 Melbourne Road, Williamstown	R.
3 K J	McDonald, G. H. A.	211 Richardson Street, Middle Park	R.
3 K K	Moore, R. O.	51 Seymour Grove, Camberwell	R.
3 K L	Kennedy, J. W.	317 George Street, Fitzroy	R.
3 K M	Turner, H. C.	49 Murphy Street, South Yarra	R.
3 K N	Outhrer, J. C.	14 McCully Street, Ascot Vale	R.
3 K O	West, A. E. S.	24 Robinson's Road, Hawthorn	R.
3 K P	McLachlan, A. T.	28 Atkinson Street, Oakleigh	R.
3 K Q	Drayton, C. W.	426 Lygon Street, Brunswick	R.
3 K R	McQuie, J. M.	40 Clarence Street, Elsternwick	R.
3 K S	MacDonald, D. M.	10 Burton Crescent, Ascot Vale	R.
3 K T	Secombe, L. M.	9 Bay View Terrace, Ascot Vale	R.
3 K U	Baker, S. C.	234 Clarendon St., Sth. Melbourne	R.
3 K V	Malcolm, Geo. R.	15 Gibdon Street, Burnley	R.
3 K W	Griffiths, W. B.	"Briars," Springfield Avenue, Toorak	R.

SALE & EXCHANGE

Three Lines (approximately 15 Words), may be inserted in this Column for 9d.

Extra Lines or part thereof, at 6d per line.

Dynamos, English and Petrol Engine. Output 12v. 10 amps. at 1000 r.p.m. Not a toy. First class throughout. As new. £45 or near offer. Terms if required, or would exchange. Write to "RADEX," c/o "Wireless Weekly."

SHIPS STATIONS, U.S.A.

Astral KIQ; Astrea KDOP; Asunicon WTX; Atenas KDK; Atlanta of Texas KDCN; Atlantic Sun; KUMS; Atlantus KIGN; Atlas WTT; Auburn WDOE; Auditor KOFF; Ausable WWP; Avalon KIZL; Avalon WFH; Avondale KKAU; Awensdaw KEMC.  
Babboosic KITC; Babinda KODP; Baccarat; KUSX Bache NLK; Bacoi KJU; Daddaeock KUJD; Baganito KGB; Bagley NVU; Bagoso WSAU.

Bainbridge NUQL, Bakersfield KIZC, Baladan KVEU, Balcalita KOLM, Baldbutte KISM, Baldhill KOBV, Baldrige KEQC, Baldrick KEQJ, Ballcamp KENV, Balenas KEMZ, Ballew KENQ, Balleliett KVIA, Balosaro KEDB, Balsam KIJC, Balsto WPA, Banago WVEO, Banaran KENZ, Bancroft KNOI, Banicaa KEQF, Bannack KIZQ, Bantu KLM, Bar Harbor KEFD, Bark Hamstead WLOU, Barlow WLAE, Barrallton KIDT, Barranca KIFR, Barrenfark KIJD, Barry NUQP, Barryton KIJP, Barstow KIJR, Barthney KIZD, Bartholomew KOMF, Bartolome KOB, Barugo KEQC, Barwick KOBR, Basco WVEI, Bascobel KOF, Basford KOPR, Bantanes KEKX, Bathgate KIGS, Bathalum KIQT, Baton Rouge KSG, Battahatchee WCOA, Battonville KIGV, Bavington KOPC, Baxley WBIO, Bayama WDEU, Bay Head KINT, Bayou Chicp KDCK, Bayou Teche WXHU, Bayport KUJC, Bayside KDDW, Bayspring KDDW, Baytown KDEM, Bayway KSR, Bear NRB, Belair WTOI, Bearport KUBK, Beatrice KLJ, Beaumont WXUA, Bedminster WQIE, Belanquan WPEA, Belding KPUE, Belfast KRD, Belfort KIQB, Bella WAX.

Published by W. J. MacLardy, "Truro," Powell Street, Neutral Bay at the offices of W. M. MacLardy, 243 Castlereagh Street, Sydney.



February 9th, 1923

WIRELESS WEEKLY

## WIRELESS EXPERIMENTERS REQUIREMENTS

APPARATUS AND PARTS with a guarantee of 100% Efficiency.

APPARATUS and PARTS with a guarantee of 100% efficiency.

VALVE RECEIVING SETS—Equal to any apparatus in the world's market, from £16 complete.

CRYSTAL SETS—From £6, complete.

VALVES—Expanse "B", £1/15/-; Marconi "R", £1/17/-; UV-200, £2/-/-; UV-202 5-watt. Transmitters, £3/-/-; others, from 2/6 each.

'PHONES—S.G. Brown's Single, 25/-; Murdoch's Double, 2,000w., 35/-; Trim's 3,000w., 39/6; Bestone 2,200w., 42/-; W.E. 4,000w., 42/6; Brown's 2,000w., £5/3/6; Loud Speaker, £5/5/-.

CRYSTAL DETECTORS, 15/-; parts from 4/- complete set; Crystals, 1/-, 1/3, 1/6 and 2/- each.

"COL-MO" GALENA—Guaranteed most sensitive crystal procurable, 2/- each.

CRYSTAL CUPS—N.P., 1/- to 1/9.

CONDENSERS—Fixed; Erid, 1/9; 'Phone, 1/9.

VARIABLE CONDENSERS—De Forest, .0005 M.F., £2/10/-; .001, £2/17/6; .0015, £3.

"COL-MO" KNOCKDOWN—Ready to assemble; in capacities from .00015 at 7/6 to .0015, at 18/6, complete.

KNOBS—From 1/6, Dials, 2/3 and 3/9; Combination Knob and Dial, 6/- and 7/- each.

RHEOSTATS—7/6 and 8/6 each.

EBONITE TUBE—3in, 3 1/2in, and 4in diam., 12/- per ft.; Rotors, 5/6 each.

HONEYCOMB COILS—3/6 each; Plugs, 5/-; Triple Coil Mountings, 25/- and 37/6 each.

LOOSE-COUPLER PARTS—Complete sets, 24/-.

INTERVALVE TRANSFORMERS—£2/-/-, £2/10/-, and £3 each.

TERMINALS—From 5d, each; special consignment of American Binding Posts and Terminals, N.P. at 8d, each.

SWITCHES—2/3 to 5/6 each; Studs, 2/- doz.

"EVERYTHING IN RADIO."

THE COLVILLE-MOORE WIRELESS SUPPLIES—

10 ROWE STREET, SYDNEY.



Just a Real Good Car  
**AUTOMOBILES LIMITED**  
207 Castlereagh Street, Sydney.

## QUALITY RADIO SUPPLIES

All our Radio Apparatus is made by skilled Radio Engineers and carries our usual guarantee.

Complete Crystal and Valve Sets, or all parts to build your own.

Head Sets 2000 to 8000 ohms. Radiotron, Myers, Expanse (2 Filament), and Marconi Valves: Everything for the Amateur.

New Apparatus arriving regularly.

SEND FOR PRICE LISTS.

**W. HARRY WILES,**

Radio Department,

**60-62 GOULBURN STREET,**

One door from Pitt Street.

**SYDNEY.**



WIRELESS WEEKLY

February 9th, 1923



## Wireless Experimenters!



Thousands of Amateur electrical experimenters prefer to build their own Wireless Sets—and it is the Universal policy to offer to the Amateur, the highest grade parts and material for the lowest possible outlay.

**BUILD YOUR OWN Wireless Receiving Set—but build it RIGHT.** By using Universal parts, material and simplified instruction—you will build it **RIGHT**—and it will work **RIGHT**.



The following items are a few of the numerous lines of special interest we are offering to the amateur:—

VARIABLE CONDENSERS, .0005 Mfd. 18/6.

VARIABLE CONDENSERS, .001, Mfd., 23/6.

Special Finish, Genuine BAKELITE KNOB AND DIAL, 5/6.

ROTARY SWITCH ARMS, 1½ in., 1½ in. radius, highly nickelled, 2/9.

CONTACT STUDS, nickel, with nuts, 1/9 per dozen.

### OUR SPECIAL:—

**HIGH - GRADE, NICKEL - PLATED TERMINALS**—An ornament to any panel—exceptional value—as illustrated 6d. each.

### VALVES:—

**RADIOTRONS, U.V. 200, £2; U.V., 201, £2/5/-; Cunningham, C-300 detector, £2; C-301, £2/5/-.**

**GENUINE 2 FILAMENT AUDIOTRONS 38/6 each; limited supply.**

**TELEPHONE HEADSETS:—Murdoch's, Stromberg - Carlson's, Brown's, Western Electric, Baldwin's, mica diaphragm amplifying telephones.**

**Special Attention Given to All Country Orders.**

**NOTE**—For the convenience of our customers, we have opened a Central Sales Depot at

**244 PITT STREET (Opposite School of Arts).**

Our Experts will be pleased to assist the Amateur with his Radio Problems. Bring them along. Nothing a trouble.

It will pay you—to pay us a visit.

**THE UNIVERSAL ELECTRIC COMPANY.**  
**244 PITT STREET—58 WENTWORTH AVENUE.**

SYDNEY