



WIRELESS WEEKLY

March 9, 1923.

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GRACE BROS. LTD.

Broadway, Sydney

March 9, 1923.

WIRELESS WEEKLY

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A Talk With Wireless Weekly

Wireless Weekly goes to press this week with a feeling of elation that the "Boom" is not far off.

Lists just received from Melbourne show a large increase in the number of amateur licenses granted.

All Clubs seem to be making an effort to secure more members.

Dealers inform us that their sales are increasing weekly. The man in the street pricks up his ears when the word "Radio" is mentioned and seems keen to know something about the Science, and best of all, Wireless Weekly sales are increasing by leaps and bounds.

In making a tour of the suburbs, we notice numbers of new aerials in course of erection. Wireless Weekly is convinced that within a month there will be broadcasting—if not by the Broadcasting Co., then by amateurs.

During the last 10 days the writer has not failed once in getting good music every evening, and by this issue it will be seen that at least two well known amateurs will be transmitting within the next few days.

DON'TS

Don't try to master radio all at once. Begin with the simplest things and work up.

Don't hesitate to ask questions. Ignorance is no disgrace and dealers and manufacturers are glad to give advice.

Don't expect to have as little trouble in summer as in winter. Static is far more troublesome in warm weather than in cold.

Don't listen to the advice of beginner friends who know no more than yourself.

Don't forget that radio is simple but that common sense is as necessary as with anything else.

Don't forget the importance of little things.

Don't be in such a hurry to try your set that you skimp things and make slipshod connections.

Don't try to drive tacks or nails into Bakelite or hard fibre. Drill holes and use screws.

Don't forget that the wires on a coil may be kept evenly spaced by winding cotton twine between the wires.

Don't run wires parallel when making a set.

Don't try to ground a set on an indoor electric light or bell circuit.

Don't forget that the positive pole of the "B" battery is connected to the plate circuit of your tube.

Don't forget that if the tube looks blue you have too much "B" battery.

Don't forget to mark the adjusting knobs or handles when you get the set tuned to a certain station. It will save time in picking it up next time.

Don't fail to learn the dot and dash code. You will get far more pleasure from your set if you can read them.

Don't get wires tangled and snarled. A kink in a wire will cause it to crack or break.

Set the detector in adjustment. If it is a crystal type, locate the sensitive spot with the assistance of a buzzer test. If it is a vacuum tube, the filaments should be lit; then if one terminal of the phones is disconnected a sharp click will indicate that the tube is functioning.

Tighten the coupling between the primary and secondary circuits by bringing the primary and secondary coils into closest inductive relation. (Not necessarily in the single circuit type of receiver).

Tune the antenna or primary circuit. This is done by taps on the inductance or by a variable condenser.

Tune the secondary circuit. This is usually done by means of a grid variometer or a variable condenser.

If the set is regenerative the tickler circuit should now be adjusted for maximum regeneration without distortion. In a honeycomb set this is done by moving the third coil (tickler coil) nearer to or farther away from the secondary circuit. Other regenerative circuits employ a variometer for this purpose.

In the case of interference the coupling should be decreased and the signals tuned in again, in the primary and secondary circuits, until the interfering signal is eliminated. In a single circuit receiver the inductance of the antenna circuit should be varied and the signals retuned, with the antenna tuning condenser, until an adjustment is found where the interference is reduced to a minimum.

If your antenna length is too long (over 150 feet) put in a series variable condenser to bring down the wave length to a suitable value.

If your antenna length is too short (under 75 feet) it would be advisable to put in either a variable condenser across the antenna inductance or a loading inductance in series with the antenna inductance to boost up the wave length to a suitable value.

In a regenerative receiver it is advisable to regulate carefully the adjustment of the filament current; if the filament is high, less regeneration will be found necessary, and if the filament is reduced more regeneration will be required.

One particular combination of these two adjustments will bring in the signals clearest and with least distortion.

There are three methods of varying the inductance of a coil: By means of taps, by means of a slider, or by means of a continuously variable inductor such as a variometer.

Sharper tuning is accomplished by inductively coupled tuners than by conductively coupled tuners, and by two circuit receivers than by single circuit receivers.

Regeneration causes an effect similar to the elimination of resistance from the radio frequency circuits of a receiving set, and in this way does away with energy losses in these circuits, thus producing louder signals.

A vernier condenser (a variable with two or three plates) is a great help in tuning when it is connected across the secondary coil of a variocoupler in a regenerative circuit.

Distributed capacity in a tuning coil is deleterious to sharp tuning. Shellac or varnish or any form of wax adds to the distributed capacity of the coil to which it is applied.

The looser the coupling in a two circuit tuner the sharper will be the tuning.

A receiving set connected to a short, low antenna will tune sharper than if connected to a long, high antenna, although the latter will give stronger signals.

Tuning on a loop antenna is sharper than on an outdoor antenna; this is the case with all closed oscillatory circuits.

The less resistance in an oscillating circuit the sharper will be the tuning in that circuit.

Radio Equipment

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Murdock's Double Head sets, 2000 ohm. 35/- set

Crystal Type Receiving Sets from 50/- set.

Valve Type Concert Receiving Sets, £16/10/-

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Expanse V24, 37/- each.
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All Types of Terminals, Screws, etc., Condensers and Parts. Honeycomb Oils, Crystals, Resistances, Knobs and Dials, Studs, Detectors.

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COMPLETE VALVE RECEIVING RADIO SETS

These practical sets comprise 4 volt C.A.V. Battery, a pair of 2000 ohm phones, 30 volt "B" Battery and mounted Honeycomb Coil, complete with cabinet. At £14/14/- these sets offer magnificent value. Call and see them.

Consult us on your radio problems.

We can supply you with designs and apparatus for Transmitter and Receiving sets, and all Wireless information.

Orders from out of town, given immediate attention.

RADIO Company

18 Elizabeth Street, Sydney
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Continued from Page 2

The use of a smaller grid condenser in the vacuum tube detector circuit (say .00025 mfd. instead of the usual .0005 mfd) results in greater selectivity of tuning.

At least 50 per cent. of the efficiency of a receiving set lies in the skill of the operator who is tuning it.

Wireless Weekly

NEW RECEIVING OFFICE
2nd Floor, Aberdeen House
Regent St., City

The above address is the only place that articles, advertisements, etc., may be received for Wireless Weekly.

Postal Address: Box 378 G.P.O.
Temporary Telephone: Redfern 964

RADIO FOR SOUTH AFRICA.

Sir Thomas Watt, the South African Minister of Public Works and Posts and Telegraphs states that the government intends to acquire a wireless station for the purpose of establishing an adequate service with other countries of the world, and is at present considering several propositions in this connection.

Arrangements have been made by the Postmaster-General to enable telephone subscribers to book trunk calls in advance. The calls, which are affected at or about a specified hour, as desired by the subscriber, are known as "fixed time" calls, and the booking may be either for a single call or for a daily call for a minimum period of a week, including or excluding Saturdays and Sundays. The calls are number to number, not person to person, calls. A single "fixed time" call should, if possible, be booked at least three hours before the time at which it is required, such as stock exchanges, corn exchanges, etc.

NEW RADIO BOOKS.

- Radio for Amateurs—How to Use, Make, and Instal Wireless Telephone and Telegraph Instruments** by A. Verrill, 11/-, posted.
- Book of Wireless Telegraph and Telephone**, by A. F. Collins. 8/-, posted.
- Oscillation Valve; Elementary Principles of its application to Wireless Telegraphy**, by Rangay 9/-, posted.
- Radio Experimenter's Handbook**. By P. Coursey, 5/-, posted.
- Wireless Telegraphy and Hertzian Waves**, by S. Bottoac, 4/10, posted.
- Wireless Telephone: What It Is and How It Works**. By P. Coursey, 5/-, posted.
- Making Wireless Outfits**. By N. Harrison. 4/-, posted.
- Calculations in Telegraphy and Telephony**. By H. Few. 3/-, posted.
- Experimental Wireless Construction**. By A. Morgan, 2/9, posted.
- Wireless Construction and Installation for Beginners**. By A. Morgan, 2/9.
- A.B.C. of Wireless: A Popular Explanation**. By P. Harris. 10d., posted.

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DO RADIO CLUBS HELP?

**MR. HENRY M. PLANNER
GIVES HIS OPINION.**

Dear Sir,

I would be glad if you would grant me space in your valuable journal to comment upon Mr. J. W. Robinson's communication in your previous issue.

While agreeing with Mr. Robinson's remarks in the main I do not feel that he is quite justified in some of his remarks regarding the clubs.

I have been a member of the North Sydney Radio Club ever since it was formed about 14 months ago, and so feel that I am in a position to state a few facts upon its behalf.

In the first place Mr. Robinson says that no effort is made by the clubs to obtain new members and secondly he claims to have heard the clubs designated as "mutual admiration societies" by which I suppose he means that they are unable to make things sufficiently interesting from an instruction point of view.

I may state that a month or so ago every licensee on the North Shore was circularised in an endeavour to swell the Club's membership, and out of

that lot we received one reply.

I would also remind Mr. Robinson that the "Wireless Weekly" contains an accurate report of the doings of all radio clubs every week and if he will take the trouble to glance over a few back numbers he will see that N.S.R.C. is not behind in supplying technical, or other, instruction for those who care to take the trouble to visit us.

The trouble appears to be this:

Up to two or three years ago experimental wireless was a very different thing to what it is to-day. There were no shops, no clubs, and a very few text books to help the experimenter upon his way, and, as a consequence, the only ones who took up the science were those who intended to learn something of the subject, and it is these men who have made wireless what it is to-day.

But the average amateur of the present day has no intention of either experimenting or trying to advance the science one scrap and only succeeds in hindering the genuine experimenter by causing the

need for drastic restrictions owing to his own ignorance and carelessness in operating his set as conditions ruling at present in America prove only too well.

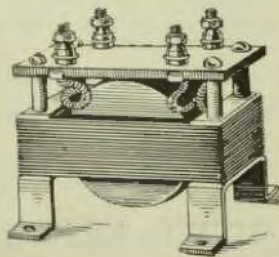
What is needed is a more stringent application of the present restrictions to protect the interests of the men who regard radio as a hobby instead of a toy.

I do not wish it to be thought for one moment that I am trying to squash the amateur. I am not. But I do say that unless a man is prepared to take some interest in the technical side of the subject he should not be allowed to handle apparatus which he does not intend to make proper use of.

If Mr. Robinson will, as I suggest, glance over a few "Weekly's" he will notice that the North Sydney Radio Club, at least, affords the embryo experimenter plenty of opportunity of acquiring a proper knowledge of the science. But if he cares to visit their club room when a technical lecture is being delivered (which has previously been given full publicity to) he will find and agree with me that the fault lies, not with the clubs, but with the so-called "experimenter."

INTERVALVE TRANSFORMER.

CLOSED CORE—FOR AUDIO FREQUENCY
AMPLIFICATION.



This Transformer, which is scientifically constructed, is of the shell type. It is simple, reliable and compact. Maximum results are assured. The complete measurements of this Transformer are 2½ x 1¼ x 1¾ in. It is provided with feet in order that it may be mounted in any desired position.

Price - 45s.

Postage 6d.

Homecrafts *Melb*
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211 SWANSTON STREET

TREAT YOUR NEIGHBOR AS YOU YOURSELF WOULD BE TREATED.

Remember that your regenerative receiver under certain conditions is a weak transmitter of radio waves, especially if it is of a single circuit type. It radiates energy just the same as the broadcasting station. The moment you turn your filament on full, producing the heterodyne effect already explained, you are transmitting a carrier wave that will seriously interfere with other neighboring receiving sets. If your set is not correctly adjusted to the same wave length as the broadcasting station, your wave will heterodyne upon the wave sent out by the latter and the other receiver within several blocks. This means that the enjoyment of your neighbors will be seriously interfered with. Therefore, don't turn your set into a clash will be recorded on every transmitter.

USE A LOOP WHEREVER POSSIBLE.

Since a loop aerial is highly directional in its effects, it serves as an excellent tuner, cutting out 50 per cent. of interference. The loop will receive signals only when it is pointed in the direction of the broadcasting station to which you wish to listen. Stations located at right angles to the plane of the loop will be entirely eliminated.

For broadcasting reception, loop can consist of eight turns of No. 18 annunciator wire wound on a square frame three feet to a side. These turns should be carefully spaced one half inch from each other.

REGENERATION AND RADIO AMPLIFICATION.

Many radio bugs ask whether it is possible to add one or more stages of radio frequency

amplification to their standard regenerative receivers. The answer is that such addition can be made, but that it is not advisable for these reasons:—

First, because you should keep your radio frequency set as simple as possible. Second, because of the capacity coupling between the elements of the vacuum tubes, radio frequency amplification contains all the elements of regeneration in itself. The amplification obtained from three stages of radio frequency is so remarkable that no further addition should be necessary.

MODELS

Dynamo building for amateurs; no lathe required. 30, 60 and 120-Watt Machines. List A, 3d. Bolton, Daily Telegraph Buildings, Sydney.

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Daily Telegraph Building, KING STREET, SYDNEY.

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 tempering 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; arrester gap across cord terminals; improved type head band covered with resilient tubing—comfortable, light weight and distinctive in appearance.

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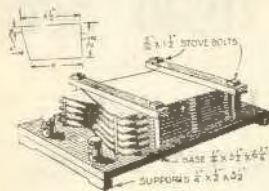
MAKE YOUR OWN

AIR GAP TELEPHONE CONDENSER IMPROVES RADIO RECEPTION

By Loyd B. Gangawere
in "Popular Science"

Because of its efficiency, this condenser, while more bulky than the ordinary phone condenser, is well worth constructing. The writer has tried it on several sets and it has always brought in clearer signals than the ordinary tinfoil and paraffin paper type.

Either 9 or 11 plates of zinc or sheet brass are cut as shown and 27 or 33 separators made 1/32-in sheet fibre 1/4-in wide and 2 1/2-in long. If fibre cannot be obtained, cardboard dipped in hot paraffin will serve.



Two end separators are placed on the base, the first plate is laid on them, and two more end separators and the second plate are put down. This is continued until all the plates are stacked. It does not matter whether the separators are in exactly the right position during the stacking operation.

The wooden clamps, 5/16 by 1/2 by 3 1/2 in., are next placed in position and the bolts drawn up loosely. The plates are then pushed into place and the sep-

arators put in position with a table knife or old hacksaw blade. The stove bolts are tightened and the centre separators placed in position with the aid of a knife or saw blade. A piece of wire is soldered to the ends of each series of plates and taken to binding posts.

The condenser may of course be fastened directly to the back of a panel, instead of being mounted on a base.

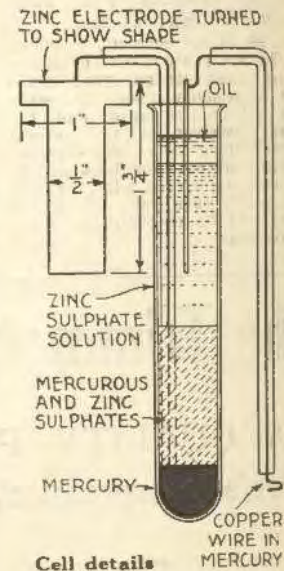
HOME MADE B BATTERY REDUCES NOISES OF DETECTOR TUBE.

By C. H. Ward
in "Popular Science."

From the number of different makes and types of radio B batteries sold, it is evident that the last word on plate voltage supply has not been said and probably will not be until a satisfactory device is perfected for the direct use of 110 a.c.

For detector operation I stumbled upon what appears to be perfection in home made batteries. Its cost is higher than a dry cell, but it is rechargeable and its very steady voltage and freedom from noise will justify the greater investment. Chemically, it is a copy of the Clark standard cell, hence its steady voltage. This is a little over 1.5 (1.43 in the standard cell, which uses zinc amalgam), so that 15 cells give ample voltage for detector operation.

The cells are contained in 4-in. test tubes about 1/4-in. in diameter mounted in a rack. In the bottom of each tube is placed a 1/4-in layer of mercury for positive pole, into which dips the connecting wire from the next cell as shown. On the



mercury is placed a layer of depolarizing paste about 1 1/2-in. thick. This consists of zinc and mercurous sulphates finely ground together in the presence of a few drops of mercury. The powder is moistened with a saturated solution of zinc sulphate, and enough of this solution added nearly to fill the tube. Evaporation and creeping is prevented by a shallow layer of oil.

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MARCONI'S CALLING DEVICE.

In a recent issue of the London "Electrician" appears a description of the Marconi radio calling device which depends essentially upon the transmission of a series of Morse dots on a 600-meter wave length, at the rate of 3 per second, and the effect of these dots on the receiving apparatus is cumulative. In ordinary radio operation it is not likely that even eight consecutive dots would be received in this way, but in order to ensure practical freedom from accidental operation the number of dots selected has been fixed at nine. The transmitter of this calling device serves to send out the dots. For receiving these signals a three-tube amplifier and tuning circuit are provided. In addition, an oscillating relay is provided which is adjusted so that its normal period of swing is the same as that of the transmitting wheel. The oscillating member of the relay is set into operation, and each swing is of greater amplitude, until at the ninth swing an arm makes a contact and closes a local circuit containing an electric bell or other signalling means.

THE FIRST RADIO GIRL.

Canada claims the honor of the first licensed amateur radio transmitting station owned by a girl. Though she is only sixteen, the young lady in question, Madeline C. Cross, who hails from Boston, is a keen and persistent wireless "fan," and knows how to obtain the best results from her installation.

UNDERGROUND RADIO FOR MINERS.

Experiments were recently conducted at Bruneton, Pa., by the Bureau of Mines, in conjunction with the Westinghouse engineers for the purpose of determining the adaptability of radio communication to mine rescue work. Signals were distinctly heard through 50 ft. of coal strata but audibility fell off rapidly as this distance was increased. With a receiving instrument 100 feet underground signals from a station 18 miles distant were distinctly heard, but an iron pipe, containing electric light wires, which extended therefrom through the mine, assisted greatly in the reception. The fact that signals were detected, even though faintly, is looked upon as sufficient to encourage further experimentation. The

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transmitter used sent out continuous waves of 200 and 300 meter wave length. In all experiments vertical antennae were found to give the better results. Horizontal antennae gave practically no reception. A loop of a single turn was used with fair results. The strata at the experimental mine lie almost horizontal. The mine is a comparatively dry mine, but the overburden is damp, and a small stream of water is continually flowing from the mine.

**Get Your Wireless Gear at
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Condenser Plates, 1/9 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 ea.; 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/-.

Murdoch's Phones, 35/-; Myers' Valves, 35/-.
Catalogues, 9d. each including wiring and other diagrams. All makes of Telephones and Valves.

Crystal Cups, 1/-; Detectors, 5/- each; Loose Couplers, 40/-; Cabinets, Ebonite, Bakelite, and All-round Materials.
Complete Crystal Sets, £3/10/-, £6/10/-, £7/10/-; Valve Sets, from £9 to £35, 1, 2 or 3 valve; Radiotron Valves, 37/6; Vernier Rheostats, 15/-.

INTERVALVE TRANSFORMER, 40/-.
Closed Iron Core.

UNDER NEW MANAGEMENT
Works' Manager: Raymond McIntosh.
General Manager: J. S. Marks.
All Communications to the Firm.

THE RADIO LOUD-SPEAKER IN A NEW ROLE.

An interesting installation has recently been completed for the Piedmont High School, Piedmont, Calif., involving a distinct improvement over present methods of inter-class communication. The equipment consists of a central or master station and twenty-five receiving stations, each equipped with a loud-speaking horn. The motor-generator and battery are installed in a steel cabinet in the basement of the school building. The master station is operated like an ordinary telephone. Talking into the instrument in usual tones, the speech is amplified in any or all of the twenty-five classrooms in sufficient volume to be distinctly audible to all the students. Radio entertainments

can also be heard over the system if desired. It is announced by the manufacturer of the equipment that similar installations have been developed for hotel, railroad terminal and other commercial uses, but this is the first application of the loud-speaker to school service.

RATING RECEIVER SENSITIVITY IN OHMS IS A MISTAKE.

"Yes, this is a very good receiver. It has a resistance of four thousand ohms." This is a sale's talk that many clerks in the radio shops give to unwary purchasers of head sets. In doing so, they not only show their ignorance concerning 'phone construction and design, but they help to create an impression that is entirely wrong. They are responsible

RADIO COLLEGE

Applications are now being received for forming the next class.

23 LANG STREET

F. B. COOKE,
Principal

for the notion that the sensitivity of a head-set is indicated by the resistance of the receivers.

This policy of selling head-sets on the strength of their resistance is wrong, and should be discouraged by dealers. It not only hoodwinks a badly misinformed public, but it is a gross injustice to manufacturers who, for sound technical reasons, do not wish to carry the D.C. resistance of their head-sets to such a high value. One might just as well measure the horsepower of an automobile by the size of its carburetter. The average 2000-ohm head-set is as sensitive and, in many cases, more so than the receiver with a resistance of 4000 ohms. Radio receivers should be rated by their impedance. The Brandes head-sets are designed to have the same impedance as the average circuit in which they are used, since it has been found that this gives maximum efficiency. This impedance varies, of course, with the frequency of the current. The Brandes company has taken as a standard 1000 cycles, and at this frequency their head-sets have an impedance of 22,000 ohms. It has been found that this is the resistance of the average crystal or tube circuit.

Make Your Own Set

We Stock All Parts

All kinds of Electrical Accessories

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March 9, 1923.

WIRELESS WEEKLY

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MUSIC IN THE AIR.

Mr. E. B. Crocker, 2 B.B. Marrickville, has started experimenting in transmitting again of 410 metres and is working about 7.30 nightly using one 5-watt Radiotron tube.

In a couple of weeks' time he intends adding another 5-watt tube.

Any distant station hearing 2 B.B. please communicate with him at 14 Roseby St., Marrickville.

Mr. MacLurean again entertained listeners in on Sunday night with splendid opera music.

Garden Island was transmitting at 10.30 last Sunday morning.

Mr. F. Basil Cooke is about to conduct wireless telephone experiments at a very early date from "The Manor," Clifton Gardens. The transmitting set to be used while unassembled, and on the bench using only a temporary aerial and 8-watt power has been heard at

Tamworth by our well known country experimenter, Mr. Todd.

The wave length that Mr. Cooke will be transmitting on will be 440 metres.

RADIO LIGHTNING ARRESTERS.

Compulsory in U.S.A.

Lightning arresters are now a necessity of radio equipment and have been made the subject of a special ruling by the National Board of Underwriters. Each installation must be provided with an arrester that will operate at a potential of 500 volts or less. An arrester in which the gaps are widely separated and protected by a glass container has been produced, and is obviously superior to the ordinary air-gap type. The latter is frequently clogged with flying particles of dirt or other foreign matter, which entirely destroys its protective value.

COMPARATIVE EFFICIENCIES OF VARIOUS TRANSMITTERS

have recently been determined at the Eiffel Tower Station in Paris, according to a report in the "Engineer." It is reported that the efficiency of the musical spark transmission is 47 per cent., and that of the Poulsen arc system 29 per cent. If, however, the Poulsen arc is employed with no compensating wave, its efficiency rises to 45 per cent. At the station at La Dona, near Lyons, experiments were made in order to establish the cost of transmission with the Poulsen arc and with the high-frequency alternator. The latter apparatus appears to be much more economical than the former, the alternator requiring only about 54 per cent. of the energy required by the arc. The care required by both types of apparatus, the accidents in their working, and the sundry expenses have been minutely analysed, and the results appear to favor the use of the high-frequency alternator, for the present, at least.

"BECO" WIRELESS PRODUCTS

Large supply of Remler Radio Apparatus. Giblin-Remler Inductance Coils.

IDEAL FOR RECEPTION ON ALL WAVE-LENGTHS

It is well known among Radio Experimenters that the most efficient receiving sets are those designed so that all of the turns of wire in their inductance coils are in constant use, regardless of the wave-length being received. This factor limits the wave-length range of the most efficient sets for receiving. Maximum efficiency is obtained for any given range of wave-lengths in either single circuit or coupled circuit receivers by using GIBLIN-REMLER COILS, shunted by a variable condenser. Any desired range of wave-lengths as at the operator's disposal by merely changing the size of the coils used in the coil mounting.

PRICE FROM 6/- UNMOUNTED.

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NORTH SYDNEY RADIO CLUB.

At the North Sydney Radio Club on Tuesday, the 17th ult., Mr. Raymond treated the members and visitors present to one of the most interesting lectures upon "Amplification" ever heard at the club.

The lecture was the first of a series of three and covered the first principles of the subject.

Mr. McIntosh commenced by showing his audience how the transformer was used in the ordinary telephone circuit and how sound waves were converted into electrical impulses.

From there he went on to explain the elementary principles of the valve and showed how it could be used to amplify the impulses before mentioned and the manner in rectified signals were treated in the same way.

The lecture was backed up throughout by the use of a two stage amplifier and many interesting demonstrations of the subject were given.

Mr. McIntosh will deliver the second lecture of the series next Tuesday night and will deal with the amplification of wireless signals at radio frequency.

All those who desire to obtain a sound knowledge of the multi-valve receiver would do well to be present.

The lecture will be held at the club-rooms Cr. Alfred and High Streets, North Sydney at 8 p.m.

NEW CLUB.

Drummoyne and Surrounding Districts.

The first meeting was held on Wednesday, 7th February. All inquiries should be made from Hon. Organisers, Messrs. Mellor and Guthrie, Fire Station, Lyons Road, Drummoyne. Ladies are cordially invited to join the above club.

NEWCASTLE AND DISTRICT RADIO CLUB.

At the last meeting of the above club held on the 21st February, Mr. Filmer, a club member, gave a lecture on aeri-als. The lecture was well illustrated, and many questions were asked and answered by the lecturer. Buzzer practice was carried out after the lecture.

WAVERLEY AMATEUR RADIO CLUB.

Minutes of meeting, W.A.R. C. held 1/3 23, Mr. E. Bowman in chair. A large number of members present. Minutes and correspondence were received. A new member was enrolled. The Club has now entered for the Trans-Pacific Radio Tests. There being no further business, a question box was started. Many interesting questions were asked and answered by any member who felt capable of answering the questions. Some questions were very difficult and tricky, but on the whole everyone was satisfied with the answers, and all difficulties were cleared up. All communications should be addressed to G. Thomson, 87 McPherson St., Waverley.

LEICHHARDT & DISTRICT RADIO SOCIETY.

Members of the Leichhardt and District Radio Society

held their 19th annual general meeting at the Club Room, Victory Hall, rear of Methodist Church, Johnston St., Annandale, on Tuesday, the 27th February, when the main business of the evening was a lecture delivered by Mr. W. J. Zech, and entitled "The Condenser and Its Uses." The lecturer was accorded a hearty vote of thanks at the conclusion of his discourse.

As the Hon. Secretary will be absent from Sydney from now until the 17th inst., all correspondence in the interim should be addressed to the Hon. Secretary pro tem., Mr. F. Thompson, 12 Pearson St., Balmain, who will be pleased to reply to any inquiries relative to the activities of the Society.

The usual weekly meeting will be held at the above address next Tuesday night, when all interested are invited to be present.

ILLAWARRA RADIO CLUB.

The 17th general meeting of the Club was held at the Club Room on Thursday, 1st March. After minutes were confirmed and further new members elected, a letter from the Controller of Wireless was read granting approval of the Club's application for a transmitting and receiving license (in the name of Mr. C. A. Gorman) and was received with much satisfaction. Arrangements are going on apace for the erection of the Club's aerial, and construction of the sets, the receiving portion of which will shortly be put into operation. Before very long a transmitting set will also be working in the Club, when it is hoped that local amateurs will frequently have the pleasure of listening in to some telephony from their own centre, which should be

very acceptable in view of the present scarcity of "music in the air." When receiving and transmitting sets can be got into full swing in the Club, it will be a source of great interest and instruction to the members, and will, without doubt be responsible for a big increase in membership, which is already growing rapidly.

At this meeting Mr. Gorman addressed the meeting on his early experiences. Going back to 1911 (when he commenced) he outlined the various experiments he had undertaken from that time up to 1914 when the war resulted in the dismantling of all experimental stations much to the distress of the individuals concerned. Much interesting light was thrown on the means and methods of experimenters of those days, when the crystal was "the thing"—valves then being a pleasure to come. Amateurs at that time were under a considerable disadvantage with the scarcity of materials, but on home-made sets which were more or less crude in comparison with those of to-day some remarkable results had been achieved. Most amateurs did transmitting as well as receiving at that time, and licenses, at one period at any rate, could be had for the asking. Mr. Gorman produced a log he had kept during that time wherein was recorded notes of the various coast, ship and amateur stations of the day which he had received and worked with; and MQI (Macquarie Island), (which was considered record reception then with a crystal) was shown regularly and consistently logged. This was a good indication of the excellent results of crystal work of those times, though, of course, a great number of the stations

were using considerably greater power than is the case now. He also described the military pack sets used during the war and their method of working. After the war the running was taken up again with the old reliable crystal for a while, after which he installed his first valve, and with the lack of information on valves at that time it was a ticklish proposition. He later tried audio-frequency amplification but subsequently replaced it with the radio frequency method, which he is using in his set to-day with great results.

He strongly favours the latter method as the best of the two when brought up to efficiency.

The lecture was of great interest and well received. A vote of thanks was accorded Mr. Gorman to which he responded.

The next meeting of the Club will be held at the Club Room, 75 Montgomery Street, Kogarah, on Thursday, 15th March at 8 p.m., when a selected lecture will be given by Mr. S. Atkinson. An invitation is extended to all interested to attend.

The Secretary (Mr. W. D.

Continued on page 12.



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QUESTIONS

Accompanied by the coupon below will receive a prompt reply. Please understand that 2 questions only can be answered with each coupon.—Editor.

<p>Question Coupon <i>To Information Editor</i> AVAILABLE TILL 6-3-23 NAME _____ Address _____ FOR 2 QUESTIONS ONLY</p>

F. Spender (Coogee): 1. Please state whether aerial is "T" or inverted "i" type and height of second support. Is the water pipe connected to main water supply? Give full particulars. 2. Give gauge of wire. 3. Cannot be answered until above particulars are available.

E. Winston (Brisbane): 1. Write for Wireless Weekly, to Box 378, G.P.O., Sydney, enclosing 4d. in stamps. 2. A .001 variable condenser will ensure sharp tuning and thereby greater efficiency. 3. Single crystal for preference a tested piece of Galena. 4. For crystal reception a high resistance pair of phones should be used not less than 4000 ohms, although 2000 ohms will be very serviceable, especially if you intend putting in a valve later on. Get good phones.

Continued from Page 11

Graham, 44 Cameron St., Rockdale) would particularly like to hear from all amateurs in the Illawarra Suburbs (not already members) with a view to their joining up. The Club is out to help all amateurs and enthusiasts, great and small, in this district, and in view of the efforts being made on their behalf hopes they will give their

Amateur Calls

NEW SOUTH WALES.

- 2 L V Rutherford, R. L. "Inverness," Victoria St., West Maitland, R.
- 2 L V Harper, A. McL. "Coningsby," Beaconsfield Parade, Lindfield, R.
- 2 L X Richards, J. H. 12 Olive Street, Paddington, R.
- 2 L Y Shaw, R. H. "Bournemouth," Imperial Av., Bondi R.
- 2 L Z Graves, E. S. "Monaltrie," Lismore P.O., Box 36, R.
- 2 M E Robinson, M. L. 36 Collingwood St., Manly, R.
- 2 M F Ridley, M. L. "Bella Vista," Eaton St., Willoughby, R.
- 2 M G Saddlington, B.V. "Lindisfarne," Water St., Wahroonga, R.
- 2 M H Roscoe, F. E. 80 Mallet St., Camperdown.
- 2 M I McGill, G. Findlay Av., Roseville, R.
- 2 M K Newman, W. H. "Narwenda," Cooney Rd., Artarmon, R.
- 2 M L Ross, H. G. 57 Willoughby Rd., Crow's Nest, R.
- 2 M M Widdowson, F.C. 26 Upper Bayview St., McMahon's Pt. R.
- 2 M N Walmsley, J. J. Post Office, Como, R.
- 2 M O Taylor, W. H. "Yarra Glen," Burgoyne St., Gordon, R.
- 2 M P Tingle, J. G. "Mauru," Boyce Rd., Sth. Randwick, R.
- 2 M Q Robinson, F. H. "Beriven," 5 Hastings St., Botany, R.
- 2 M S Paeker, E. J. 21 Boulevard, Petersham, R.
- 2 M T Nicholls, F. L. 233 Balmain Rd., Leichhardt, R.
- 2 M U Nangle, J. "St. Elmo," Tupper St., Marrickville, R.
- 2 M V Nichols, W. G. 35 Albert St., Leichhardt, R.
- 2 M W Keep, A. E. "Weeroona," Campsie St., Campsie, R.
- 2 M X Garnsey, J. A. Warden's Lodge, City Rd., Sydney, R.
- 2 M Y Turner-Makin, H. Elliott St., Homebush, R.
- 2 M Z Haslehurst, J.W. Rawson St., Coledale, R.
- 2 N A Faulkner, E. T. 40 Hopetoun St., Newtown, R.
- 2 N B Brown, L. W. Seymour St., Auburn, R.
- 2 N C Henson, F. H. 261 Old Canterbury Rd., Dulwich Hill, R.
- 2 N D Hendall, H. E. Wellington St., Bondi, R.
- 2 N E Watson, J. 41 Bourke St., Waterloo, R.
- 2 N F White, S. H. Springdale Rd., Killara, R.
- 2 N G McCallum, A. A. Dyangum, Tweed River, R.
- 2 N H Bode, C. W. 24 Robert St., Strathfield, R.
- 2 N I Dymoock, T. H. 237 Canterbury Rd., Petersham, R.
- 2 N J Farrow, W. J. Broughton St., Campbelltown, R.
- 2 N K Bundle, A. S. 70 Croydon Avenue, Croydon, R.

practical support to the club which has their welfare and advancement as its aim.

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March 9, 1923.

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