



Sure to Get it at Grace Bros.

**It is Safer and Cheaper to Buy**

## **The Best Wireless Set**

Broadcasting will soon be in full swing.

Buy your set now and become an experienced operator before broadcasting actually starts. We are now in a position to quote for complete experimental transmitting and receiving Stations in the Country and will send our Wireless Staff for the installation and operation.

All enquiries fully answered by mail.

Send for our Booklet

**" ALL ABOUT WIRELESS "**

On receipt of 6d. in stamps we post it free.

# **GRACE BROS. LTD.**

**Broadway, Sydney**





Vol. 2.

June 1, 1923.

No. 22

## Australian Wireless Conference

THE PROPOSED REGULATIONS FOR BROADCASTING

One of the most important scientific conferences in the history of Australia was held last week in Melbourne when the leading Radio authorities of the Commonwealth met at the invitation of the Postmaster General and framed regulations for the efficient guidance of broadcasting operations in Australia.

The Conference was of particular importance because it crowned the experimental work that had commenced in Australia as far back as 1909, when Australia led the world in Wireless successes that have helped to keep our new nation in the lead with other scientific achievements such as aeronautics.

### The Conference Opens.

The Conference was opened on Thursday, 24th Inst., by the Hon. W. G. Gibson, Postmaster General, at the Postal Institute Hall, Melbourne. He stated that broadcasting had become a necessity both to Australian commercial and industrial conditions; and he considered the best thing to do, now that the rest of the world had been experimenting with broadcasting, would be to invite all those who were best versed in the subject to frame special regulations for broadcasting in Australia, which nation differed in many conditions from those of other countries; and he trusted that those assembled would carefully study the whole situation and let him have a series of regulations

worthy of the great science they represented.

He particularly stressed the fact that Australia was "the land of magnificent distances," and they must bear in mind that the man out-back, not having the conditions of city life, could by means of wireless win many pleasures that would make conditions more pleasant for him than at present; so that whatever scheme would be formulated, he wanted the interests of the public kept in view. He desired that those who were interested in the best development of wireless be given fair consideration, particularly the manufacturer, trader, and the "listener-in." He would also like experimenters to be studied, and would emphasise the point that the latter must not interfere with the broadcasting services.

### The Empire Greeting.

Mr. George A. Taylor, President of the Association for Developing Wireless in Australia, New Zealand and Fiji, thanked the Postmaster General for the opportunity he had given them for the discussion, and he thought that it was most appropriate that this Conference should be called to discuss wireless on Empire Day at a time when the good wishes of the English-speaking peoples were keenly working with our Empire centre; hence on behalf of the Conference he asked that the Postmaster General forward to His Majesty the King, the following ex-

pression of loyalty from those assembled:

"That this Conference representing the Australian leaders in Radio Science, forwards on this Empire Day its sincere expressions of loyalty to His Majesty the King, and is proud to thus greet him with the latest development of science that is binding the Dominion to the Motherland."

Mr. E. T. Fisk, managing director of Amalgamated Wireless (Aus.) Ltd., seconded the motion, which was carried unanimously.

The Postmaster General in reply thanked those present for their expression of loyalty and stated he would have much pleasure in forwarding the message to His Majesty.

In answer to a question he stated that any bona fide company desirous of broadcasting would have no difficulty in obtaining a license. He then called upon the Conference to elect a chairman, and Mr. Collass (West Australia) proposed and Mr. E. Hirst (N.S.W.) seconded that Mr. George A. Taylor be chairman, which proposal was carried by acclamation.

Mr. Taylor then opened the meeting and called upon those present who had schemes to place same before the meeting. Mr. E. T. Fisk then clearly and lucidly explained a scheme he had prepared for the carrying on of broadcasting which was as follows:



Mr. Fisk's Proposals.

(a) A number of wave lengths shall be set apart for broadcasting stations supplying different services, and working on different powers, and those wave lengths shall be chosen so that neighbouring broadcasting stations shall not interfere with each other or with other traffic.

(b) Licenses for stations shall be issued for all available wave lengths within a given area.

(c) Each station to be licensed to transmit on one wave length only.

(d) Receiving licenses to be issued for using apparatus capable of receiving on one wave length only.

(e) Licenses to hire or sell receiving apparatus conforming with regulations to be issued to dealers in electrical apparatus.

(f) All licenses to be renewed annually.

(g) Proprietors of broadcasting stations to state what charge they propose to make for their service, and to be empowered to make a charge upon those making use of the concerts they broadcast.

(h) Broadcasters to notify the Government authority of cases of breach of regulation.

(i) Dealers to sell apparatus to holders of licenses only.

(j) Dealers to keep a record of goods sold.

(k) Broadcasters to provide the Government with a list of license holders using their services, and to pay an annual fee to the Government for each of these license-holders.

(l) No person or company to deal in goods without a license.

(m) Bona fide experimenters to be given every reasonable freedom in conducting experiments which do not interfere with the matter, provided by broadcasting concerns.

Mr. Fisk pointed out that any scheme adopted must be attractive to the public, and also attractive to the broadcaster. That it must embody all those items laid down in the foregoing proposal, but that his opinion was that the amusement side was the most important to make the scheme successful. That market reports, weather lectures, etc., would not have listeners in un-



Captain George A. Taylor, Assoc. M.L.E. (Aust.), who was elected Chairman at the recent Wireless Conference in Melbourne, is the President of the Association for Developing Wireless in Australia, New Zealand and Fiji.

Radio science owes much to Captain Taylor, as he, amongst other achievements, was the first in the world to instal wireless on railway trains (Albury to Melbourne, 1910); to communicate between moving trains (Toowoomba to Brisbane, 1911); to utilise radio for gun-firing and controlling aeroplanes, in 1910. He devised the first audible transmitter in 1910, and the first wireless foghorn, which he fixed on S.S. Kanowna during her run from Sydney to Melbourne, in 1911.

less the amusement part was there. That the British Broadcasting Co. was a failure owing to the fact that only one class of programme could be given, which did not suit all classes of people. Mr. Fisk said that a wide variety of services were needed so as to give the public a choice, also that we had a vast territory to cover which would necessitate a number of stations throughout Australia. As regard the experimenter he did not think that he should be interfered with if he did not interfere. Discussion was then entered upon.

Discussion.

Mr. Boyd brought up the question of patents, to which Mr. Fisk replied that licenses to manufac-

ture, etc., would be given by his company to anyone on suitable terms and on a payment that would be arranged.

Mr. Court asked what wave lengths would be used and available, to which Mr. Fisk replied that he was unable to say, but that this matter would be determined by committee afterwards, when regulations were being drawn up.

Mr. Brown asked would the number of stations be limited, to which Mr. Fisk replied stating that the number of wave lengths available would be the only limit.

Mr. Gannon suggested different hours for different stations on the same wave lengths. Mr. Fisk stated that this would only be possible in case of a station not using the whole of the time available to it, or as he put it, "sitting on a wave length."

Mr. Jones (S.A.) asked would preference be given in the granting of broadcast licenses. Mr. Fisk thought that in the "first in" should have first preference, except perhaps in a case of two applications at the one time when the two cases might be judged on their merits.

Mr. S. E. Wilson (N.S.W.) pointed out that as the Government were not prepared to broadcast, who was going to do it? He pointed out that successful commercial business was carried out by competition, and that successful broadcasting could be carried out in the same fashion. The field thrown open for competition would naturally mean good broadcasting services, as the public would only patronise those who gave the best services, in exactly the same way as they patronised those firms that sold the particular class of goods they desired.

After some discussion the chairman proposed that a committee be formed to go into the scheme proposed by Mr. Fisk, together with other propositions, and to devise regulations that would later be put before the Conference for criticism. This was unanimously carried, and the following were appointed:

Messrs. G. A. Taylor (Representing the Association for Developing of Wireless, Queensland) as chairman, Fisk (Annulgnated Wireless (Aus.) Ltd.), Collas (West Australian Pastoralists), Boyd (Victorian Retail



June 1, 1923.

## WIRELESS WEEKLY

ers), Mingay (N.S.W. Division of Wireless Institute of Australia), Hirst (Manufacturers); Jones (South Australian Manufacturers), Sweeney (Victorian Manufacturers), Court (Victorian Division of Wireless Institute of Australia), Just (Victorian Wholesalers), Holst (Victorian Newspapers), and Wilson (N.S.W. Retailers).

The chairman then adjourned the meeting till the following afternoon at 2.30 p.m.

### SECOND DAY

The chairman in opening the second day's proceedings, informed the Conference that after considerable discussion the Committee had drawn up regulations which were considered particularly suitable to be passed on to the Postmaster General, and that it wished the Conference to consider same.

The regulations were then placed before the Conference and after considerable discussion were, with certain amendments, unanimously approved as follows:

#### The Proposed Regulations for Australian Broadcasting.

(a) A number of wave lengths to be allotted for broadcasting purposes. Such wave lengths to be selected in respect of their suitability for stations of various powers, and their suitability for standardisation of receiving apparatus, and subject to their not being required for public wireless telegraph or wireless telephone services.

(b) Licenses or concessions for broadcasting stations to be granted for all available wave lengths within a given area.

(c) Each broadcasting station to be licensed for transmission on one wave length only, but transfers may be approved by statutory authority.

(d) Licenses to be issued under the Wireless Act to the public for receivers of design approved by statutory authority and capable of receiving signals of two or more services and incapable of variation without intentional tampering.

(e) Licenses on nominal fee to sell or hire receiving apparatus to be issued to bona fide manufacturers and electrical or other traders.

(f) All licenses to be renewed annually, excepting in the case of broadcasting stations and trading concerns which are to be for five years.

(g) Concessionaires and licensed dealers to be authorised to issue licenses to all their customers who have paid their subscription to the concessionaire.

(h) Receiving licenses and renewals thereof to be withheld from all persons who do not pay the annual subscription to the broadcasting stations.

(i) The Government to take effect measures to protect the industry.

(j) Dealers and traders only to supply receiving equipment or parts thereof to holders of licenses.

(k) Since there will be ample room for competitive broadcasting services it is necessary to place any limitations on the nature of the services provided. Each concessionaire may decide for himself the class of service that will bring him the greatest number of subscribers, that after the publication of these regulations, time be allowed in which to receive broadcasting licenses, such applications to be treated on their merits.

(l) Retailers to keep a record of all equipment sold, together with the name, address, and license number of purchaser and to notify the concessionaires of any particular wave length accordingly.

(m) Any person, company, or manufacturer dealing in or using wireless equipment without a license from the Government shall be subject to an adequate penalty.

(n) The administration of regulations governing broadcasting to be in the hands of a board having thereon representatives of the Government, of broadcasting stations, of manufacturers, of traders, and the Press.

#### Motions Approved by Committee.

That this Conference affirms the principle of preference to Australian, British and foreign manufactured apparatus in that order on such terms as will encourage use of Australian and British manufactured apparatus, and that this be the recommendation from the Conference to the Minister.

Carried unanimously.

That this Committee realises the necessity for protecting the principle of property in news, and we forward herewith a memorandum drawn up and submitted to us by representatives of the Press.

Carried unanimously.

That this Committee recognises the right of fully qualified persons indulging in bona fide experimental work to be without any hindrance, except as prescribed in Statutory Declaration, No. 169, of 1922, such right to be kept in mind in the allotment of wave lengths, subject to the experimenter giving an undertaking that he will not pouch on broadcasting services.

Carried unanimously.

#### The Postmaster General Returns.

At 4.30 p.m. the Postmaster General returned to hear the result of the Conference and was handed the amended regulations by the chairman, Mr. G. A. Taylor.

In reply, the Postmaster General said that it had been a memorable conference, and he hoped the delegates had laid down the foundation of broadcasting in Australia. It would not be long before a broadcasting service would be operating throughout the Commonwealth. He hoped they had drawn up a sound scheme, which would, at the same time, safeguard those who had the rights in this connection. He would examine the proposals thoroughly, and at the earliest opportunity regulations would be drawn up to re-



gulate the system of broadcasting wireless.

A vote of thanks was accorded the Minister for having made it possible for the Conference to meet without any Government supervision.

Prior to the closing of the Conference, Mr. Fisk moved a vote of thanks to the chairman, Mr. George A. Taylor, who had most ably and faithfully acted as chairman at the

Conference and in Committee. This was seconded by Mr. Collas, and carried by acclamation. The chairman briefly replied, stating his pleasure at the high honor that had been placed upon him and trusted that the results would be highly satisfactory to the best development of wireless in Australia.

A verbatim report of the whole of the proceedings will appear in our next issue.

*Minutes of the Meeting  
of Radio Experimenters  
to discuss the advisability of forming a  
Radio Relay  
League in  
Australia.*

Held at the Royal Societies' House, Elizabeth St., Sydney, on Monday, May 21st at 8 p.m., Convened by

S. V. Colville (2FA)

The following were present:— Messrs. Marsden, Crocker, Mingay, Colville, Barling, Perry, McIntyre, Davis, Robinson, McIntosh, Whitburn, Charlesworth and MacLardy.

Apologies were received from Messrs. Renshaw, MacInrean, Cooke and Fry, who were unable to be present, but signified their whole-hearted co-operation in the project and wished the meeting success.

The chair was occupied by Mr. S. V. Colville, who at the commencement of the meeting briefly outlined the advantages of a Relay League to all Radio experimenters.

Mr. Perry supported the chairman, and stated that in time of necessity the members of such a League would be a national asset to the country, as they would be conversant with the commercial practice in working their stations.

Mr. Colville then introduced to the meeting, Mr. Squires, W/T operator on S.S. "Sonoma," and of Los Angeles, California, who was a Charter Member of the American Radio Relay League.

Mr. Squires spoke for a few minutes, outlining the American point of view. Briefly he reviewed the history of the American Radio Relay League, from the time of its inception in 1916 to the present time.

"In 1916," he said, "the American experimenter was transmitting and receiving in precisely the same way that the Australian experimenter was now, there was no organisation controlling the transmission, and matters were rapidly getting out of hand. The idea of Radio Relay League was then formulated and was soon afterwards formed. Six months saw the Relay System complete from San Francisco to New York with main and subsidiary traffic lines, who were controlled by their respective district traffic managers and assistants.



Mr. E. T. FISK, Managing Director Amalgamated Wireless Aust. Ltd.



June 1, 1923.

WIRELESS WEEKLY

5

Spark system was then being used and did good service, until 1917, when operations saw the League again active and C. W. Telegraphy rapidly superseded the spark system.

Mr. Squires stressed the necessity for concentration on C.W. Telegraphy and not to waste time "monkeying" with 'phone sets.

The time of operations of the League stations was from 8.30 p.m. onwards every night, but with the advent of broadcasting the time was advanced to 10.30 p.m. onwards, so as not to interfere with the night programmes.

The annual subscription to the League was 24 dollars, which once a month brought each member a copy of the League's official magazine, "Q.S.T."

In answer to a question by Mr. Perry, as to the attitude of the postal and telegraph authorities towards the work of the League, Mr. Squires said that no trouble had been caused and that the Department of Commerce (who control the American experimenter) had given them every encouragement.

Some discussion was then entered upon on the question of messages sent from one to another for delivery, to say, a next door neighbour. Mr. Charlesworth thought that this was quite in order and within the W.T. Act. Messrs. Perry and Mungay, however, stated that no such message could be lawfully delivered except by the Postal Department.

The naval and military standpoint was next discussed, and it was generally conceded that the authorities would be sympathetic in the formation of a League in Australia.

Mr. Maclardy moved: "That a Radio Relay League be formed." The motion was seconded by Mr. Crocker and was carried unanimously.

Mr. Colville then discussed the question of a suitable name, and thought that the Wireless Institute of Australia should incorporate the League in Australia.

Mr. Best expressed the opinion that the League would be better if it was not connected with any other organisation.

Mr. Colville, however, enlightened Mr. Best and said that the Articles of Association of the Institute

made provision for any such organisation which, although incorporated with the Institute could have its own constitution irrespective of the members and officers of the Institute. He also stressed the advantage of the Institute's registration, Mr. Squires having stated earlier that registration was essential.

Mr. Charlesworth supported, saying that an enormous amount of groundwork would have to be gone through if the Institute was not approached, but if the League was organised through the Institute, the work in the other States would be done quickly and the League placed on a sound footing in a minimum of time.

Mr. Perry then moved that the name of the League be "The Australian Radio Relay League."

Mr. Best seconded the motion, and was carried unanimously.

Mr. Maclardy next moved that the officers of the League consist of President, two Vice-Presidents, Hon. Secretary, Hon. Organising Secretary, Hon. Treasurer and a Committee of ten.

Mr. Barling seconded, and there being no amendments, the motion was put and was carried unanimously.

Mr. Mungay moved that C. D. MacLurean be President. Mr. Crocker seconded.—Carried.

Mr. Maclardy moved that Mr. P. Renshaw be Vice-President. Mr. Crocker seconded.—Carried.

Mr. Maclardy moved that Mr. F. B. Cooke be Vice-President. Mr. McIntosh seconded.—Carried.

Mr. Mungay moved that Mr. R. D. Charlesworth be Hon. Secretary. Mr. Perry seconded.—Carried.

Mr. Marsden moved that Mr. S. V. Colville be Hon. Organising Secretary. Mr. Mungay seconded.—Carried.

Mr. Perry moved that Mr. W. Maclardy be Hon. Treasurer. Mr. Best seconded.—Carried.

Nominations were next received for the Committee of ten, the following were nominated: Messrs. Marsden, Crocker, McIntosh, Best, Mungay, McIntyre, Whitburn, Fry, Davis, Barling, Perry, Sandel, Calletta, Cooper, Blanchard, Marks, Mawson and Keogh.

The following were successful by ballot: Messrs. Crocker, Whitburn, Fry, Marsden, Barling, Perry,

Best, Davis, McIntyre, McIntosh.

Discussion was then entered upon on the advisability of placing the results of the meeting before the Broadcast Conference in Melbourne, and it was finally decided it would be advisable to have someone at the Conference to look after the interests of the League. Mr. Colville moved that Mr. Maclardy be instructed to this work and to use his own discretion in matters pertaining to the League. Mr. McIntosh seconded the motion which was carried.

Mr. Maclardy moved that the League affiliate with the American Radio Relay League, and that Mr. Squires be empowered to make all arrangements. Mr. Colville seconded the motion and was carried.

Mr. Best moved that in appreciation of Mr. Squires' assistance in forming the League he be made an Honorary Member. Mr. Marsden seconded, and was carried by acclamation. Mr. Squires briefly responded. A council meeting was arranged for Monday, 4th June, to formulate rules which would be placed before a subsequent general meeting for discussion and adoption. The meeting was called to a close at 10.15 p.m.

2/6 will be paid for the best "BIT" of wireless humour sent in each week. Articles sent in will become the property of Wireless Weekly Newspaper. 2/6 will be paid for each humorous drawing accepted.

Wireless Made Easy.

Just the book for the Amateur; contains full instructions "How to Build a Home Receiving Set," price 9d., post free.

Complete set of parts to construct a 2000 metre Loose-Coupler Set, with full instructions, 21/., post free.

Send for our complete Price List of Wireless Apparatus.

UNIVERSAL ELECTRIC CO.

244 PITT STREET, SYDNEY

"Where your money goes the furthest."



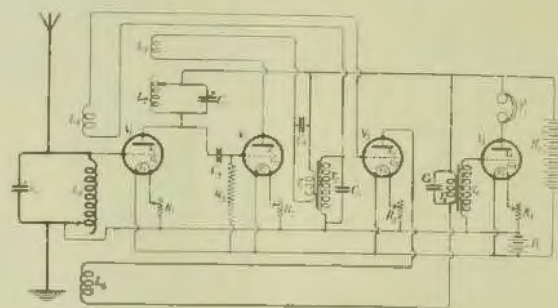
# MAKE YOUR OWN

## A New Double Re-action Circuit

The effects of double reaction are frequently masked or interfered with by natural reaction effects which are produced by the capacity coupling in a valve. Owing to the condenser action between the grid and anode of a three-electrode valve acting as a high frequency amplifier, there will nearly always be an appreciable reaction effect, which at times may be sufficient for self-oscillation to be set up.

A particular example of this is in the tuned-anode-with-reaction type of circuit which was first described in my book, "Thermionic Tubes in Radio Telegraphy and Telephony," which has since that date become so extremely popular. In this circuit there is a tuned oscillation circuit in the anode circuit of the first valve, reaction being produced in this circuit by a coil which is coupled to it, and which is included in the anode circuit of the second valve. If we tightened the coupling between the two coils so as to increase the reaction effect, the strength of the oscillations in the tuned anode circuit would increase and there would be an increase in the ever-present small reaction effect between the tuned anode circuit and the grid circuit of the first valve. It therefore often happens that this unintentional reaction effect may be highly beneficial as introducing reaction into the aerial circuit. The unfortunate fact about this reaction effect is that it is not possible with the ordinary circuit to get the maximum reaction effect on the tuned anode circuit and on the aerial circuit; the reaction effect obtained is usually less on the aerial circuit, with the result that the maximum strength of signals is not obtainable.

The accompanying Fig. 1 shows a four-valve circuit which has



given very good results, and in which a reaction effect, which may be adjusted right up to the critical value, is obtained in the aerial circuit; a similar reaction effect, which may be adjusted to the critical value, being obtained in the tuned anode circuit L2C2.

It will be seen that the first valve V1 acts as a high-frequency amplifier, the coupling between the first and second valves being accomplished by the tuned anode circuit L2C2. The second valve V2 acts as a detector, and in its anode circuit is an inductance coil, L3, which is coupled to L2 in such a direction as to produce a reaction effect in the circuit L2C2 for the purpose of increasing the strength of signals. The primary T1 of a step-up transformer, T1T2, is also included in the anode circuit of the valve V2, a condenser, C1, having a capacity of about 0.002  $\mu$ F, being used in the usual way as a by-path condenser. The secondary T2 of the step-up transformer is included in the grid circuit of the third valve

V3, a by-path condenser, C3 similar to C4, being shunted across the winding T2. The grid circuit of the third valve, however, also contains, next to the grid, an inductance coil, L4, which is coupled to the aerial inductance L1. The fourth valve V4, also acts, like the third valve, as a low amplifier, an intervalve frequency transformer, T3T4, being used to couple the valves V3 and V4. It is, however, to be noticed that in series with the primary T3 and included in the anode circuit of the valve V3, next to the anode, is an inductance coil, L5, which is coupled to the aerial inductance L1.

The three coils L4, L1, and L5, might conveniently be three honeycomb or similar coils mounted on a stand, the two coils L4 and L5 being movable.

The operation of the circuit is briefly as follows. The coils L4 and L5 are moved away from L1, the coil L3 is still kept away from the coil L2. The aerial circuit is tuned by the condenser C1, and the



tuned anode circuit L2C2 is tuned by the condenser C2 until the loudest signals are obtained. The coil L3 is now made to approach the coil L2 to obtain a reaction effect, which should increase the strength of signals. If a decrease of signal strength is noticed the connection to the coil L3 should be reversed and the process repeated. Having adjusted the coupling so that practically the maximum reaction effect is obtained in the circuit L2C2, without the second valve oscillating, the coils L4 and L5 are gradually made to approach the aerial inductance. An increase in signal strength should at once be noted, a slight retuning of C1 being necessary. If a reduction of signal strength is obtained it will either be because the coils L4 and L5 are not of the correct size, or because the connections to one of the coils should be reversed.

The effect of the two coils L4 and L5 is to introduce reaction to the aerial circuit, the valve which produces this reaction being the third valve, V3, which, from a high-frequency point of view, is entirely separate and distinct from the valves V1 and V2.

THE "STAYING" OF AERIALS.

A matter which seems to receive very little attention at the hands of the average amateur in the erection and maintenance of his aerial, is the effective staying of aerial masts. One has only to look round at the numerous aerials springing up everywhere to find evidence of this. Many otherwise fine masts are marred in appearance and lack stability by a mass of loose and unsightly guy wires, which swing about to no purpose, and fall utterly in their duty of keeping the mast in a straight and steady position for guys, if they are meant to do anything at all, are there to maintain the mast in a perfectly perpendicular, rigid and safe condition at all times—otherwise they are useless. While all are seized of the necessity of guy wires for supporting their masts, many are satisfied merely to draw the wire fairly tight and twist the ends of the guys around the anchor pegs and let it go at that. This may seem alright for a time, but very soon they will be found to work loose and fall into a very untidy and unsatisfactory condition.

As it is not possible to get the necessary tautness on these wires by hand, with an equal tension all round, it will be seen that some tightening attachment on each wire is necessary. Various types of such appliances may be had, but perhaps the most simple and effective is the union screw, which may be had with either a reversed screw at each end (giving a pull in each direction) or with screw at one end and swivel at the other. These articles until recently were only to be had in iron (galvanised or otherwise), but in addition to being rather an expensive item when it is considered that a number are required for the job, these iron screws when exposed to the weather for any length of time are apt to rust and bind in the thread, thus resulting in difficulty of operation.

The ideal for an article of this kind is of course brass or gun-metal, and an enterprising local brass-founder (who is a keen radio experimenter, to boot), seems to have solved the problem by turning out these union screws, in cast gun-metal, making an excellent job. They are to be had in two sizes—light and heavy—giving from 4 1/4 in. to 5 1/2 in. take up in the screw.

Another useful combination from the same source is a cast gun-metal pulley block, shackle, and screw-eye (or eye-bolt) complete, ready for attaching to the aerial mast. These exceedingly useful and much-sought-for articles are now making their appearance in local radio stores and should find a ready sale, being, as they are, invaluable accessories in the erection of masts for any purpose. All these articles are of very substantial make, and being of gun-metal have the advantage over iron of being absolutely impervious to weather conditions, in addition to which they may be had in number at a much more reasonable outlay.

It is remarkable how a few well-placed stays with union screws, such as are mentioned above, attached, will render the tallest and slimmest mast absolutely safe, rigid, and erect for all times, as well as giving it a trim and finished appearance, which is the aim of any man who cares for efficiency. It is worth the trouble and modest outlay—try it!



100 Pages

300 Illustrations

You Need This Book

It's profusely illustrated pages are crowded with instructive and fascinating information only.

Wireless, Electricity, Model Engineering, Telephony, Model Aeroplanes, Fretwork, Electrical and Mechanical Toys, Novelties and all Popular Hobbies.

Send 7d in Stamps

Radio Accessories



VARIOMETER

This is an increasingly popular type of tuner. It may be used in a variety of circuits, and is very efficient and easy to operate.

PRICE 26/6

VARIO COUPLER

This Coupler is indispensable for a highly efficient Tuning Set. The Primary has two taps which permits slippy tuning; Secondary is correctly proportioned and coupling is variable. Easily attached to panel.

PRICE 22/6

Parts for Variometers and Couplers.

THE ROTOR

This Rotor is very popular with Amateurs making Variometers and Couplers, accurately turned from selected wood and beautifully polished.

PRICE 4/6



THE STATOR

The wood for the Stator of Variometer is cut and turned to suit Rotor above and is finished in same handsome style.

PRICE 7/6



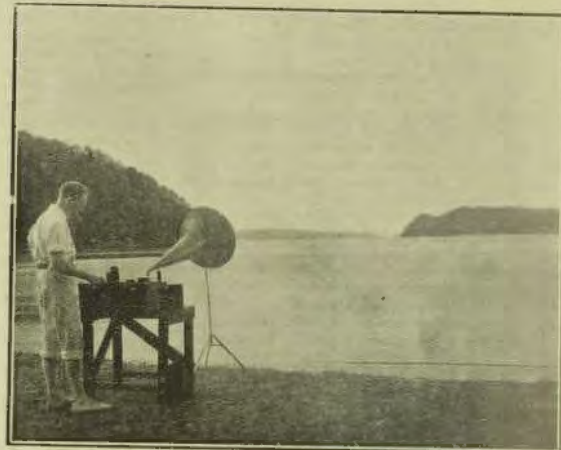


WIRELESS BOOKS

- Radio for Everybody**, by A. Lescaut-bourra. Price 10/8 posted.
- Radio Amateur's Handbook**; informative work on Wireless Telegraphy and Telephony, by A. Collins. Price 10/2 posted.
- The Book of Wireless Telegraph and Telephone**, by A. Collins. Price 8/- posted.
- Wireless Telegraphy and Telephony**, by A. Morgan, Price 9/6 posted.
- Construction of Amateur Valve Stations**, by Douglas. Price 2/3 posted.
- Lessons in Wireless Telegraphy**, by A. Morgan, Price 2/3 posted.
- Crystal Receivers for Broadcast Reception**, by P. Harris, Price 2/3 posted.
- Mast and Aerial Construction for Amateurs**, by F. Ainsley, Price 2/3 posted.
- Wireless: Popular and Concise**, by C. Chetwode, Price 2/3 posted.

N.S.W. Bookstall Co. Ltd

476 George Street, City



Entertaining Week-Enders

How Mr. Renshaw spends his Week-ends

We have often wondered how Mr. Phil Renshaw spends his week-

ends. W.W. has been fortunate in obtaining a little information regarding experiments which he is now making arrangements to initiate between his home at Roseville and his week end hungalow at Great Mackerel Beach, Pittwater. For the benefit of our readers, Great Mackerel Beach faces Broken Bay Heads and is the Balmoral of Pittwater. Barranjoey Lighthouse is seen in the photograph. The place though little known is beautiful in the highest sense of the word.

The first photograph depicts Mr. Renshaw operating his phonograph at the edge of the verandah and the second which shows the view from the house also shows a temporary receiving set at the top of the beach. By means of the huge phonograph horn music from the phonograph may be distinctly heard 1 1/2 miles over the water on a still evening, and Mr. Renshaw shortly hopes to treat the residents of Palm Beach—2 miles away—with a Radio Concert from Sydney.

Naturally Mr. Renshaw has been very reticent regarding the specific nature of his proposed experiments, but we feel sure that there will soon be something doing, more especially as he is now applying for a transmitting license at Great Mackerel and the phonograph is already in evidence.



Mr. P. RENSHAW,

The well-known President of the Radio Assoc. and Sec. N.S.W. Division of Wireless Inst



## The Use of Choke Coils in Radio

Half the fun in radio is to know why a given piece of apparatus works as it does. Here the author has expurgated enough mathematics from the theory of choke coils to make clear to the average amateur the manner in which choke coils operate and behave. It concludes with a practical suggestion for elimination of interference and commutator hum.

The two commonest and most important factors in a radio circuit are the inductance coil and condenser. These may be called the primary factors, as all radio circuits must contain them in one form or another. It may therefore be instructive to consider some of the uses of these factors, and in this article we will consider the use of inductance as a choke coil, writes A. Macdon in Radio.

The main function of an inductance coil, when used as a choke coil, is to protect apparatus behind it from high voltages or to limit the current flowing in an inductive circuit. When it is desired to limit the current a current choke coil is used; when protection is desired from high voltages a voltage choke coil is used. The current choke is more common in low frequency work, as in the primary circuit of

resonance transformers, whereas the voltage choke is more frequently found in radio circuits. In low frequency work the choke consists practically always of an inductance, whereas in high frequency work the choke may be an inductance coil or a radio frequency circuit. In low frequency work the action of the choke coil depends primarily on the inductive reactance presented by the coil, whereas in high frequency work the action of the choke, whether coil or circuit, depends both on the inductance of the coil and the distributed or concentrated capacity associated with the choke.

That the use of choke coils or circuits is a very important factor in radio will be evident from an examination of modern radio circuits. Choke coils and choke circuits—the so-called "frequency traps," are sprinkled all over, in one place to protect apparatus from high voltages, in other places to build up high voltages, and in still other places to stop the flow of leakage or other currents. Diagrams of such circuits showing the special uses of chokes will be shown and discussed later.

The necessity for using chokes arises very frequently in experimental and research work, until the cir-

### Wireless Weekly

#### Leads with Wireless News

This issue is the first out with report of the Broadcasting Conference; next week's issue will be the first out with the verbatim report.

To keep in step with Australia's Wireless Development Subscribe to Wireless Weekly.

Post free anywhere, 17/- for one year. DO IT NOW!

cuits or designs are so perfected that the chokes may be dispensed with. It is therefore important to understand exactly how a choke coil or circuit functions and why it does so. Actually how does a choke coil choke?

To the average amateur an inductance coil acts as a choke because it has a high inductance and offers a high reactance to the current at the given frequency. But in actual practice it is found that in some cases high inductances are very poor chokes and that frequently a small inductance properly built is a very good and efficient choke coil. That the amateur's idea as given above does not explain the choking action of an inductance is also proved by the fact that a

## USE KELLOGG RADIO APPARATUS For Better Results



Variable  
Capacitor



Variable  
Condenser



(a) Kellogg Headphones being manufactured from the finest materials combined with first-class workmanship, will reproduce faithfully and without distortion, signals which would otherwise be lost. To make your set more efficient, use the Kellogg Headset.

(b) Kellogg Variable condensers represent the highest point of efficiency yet reached in the manufacture of this class of radio apparatus, these condensers will enable you to eliminate interference and assist you to enjoy to the fullest extent the signals you are trying to receive.

Send TO-DAY for our attractive price list.

WE STOCK THE ADMIRALTY WIRELESS HANDBOOK  
**BURGIN ELECTRIC CO.**

WIRELESS ENGINEERS AND SUPPLIERS  
TEL. CITY 141 352 KENT STREET, SYDNEY



coil which may be a good choke at 300 metres is a poor one at 1300 metres.

Let us consider the problem the roughly the most effective choking circuit, if it could be built, is a simple, capacity-free, high inductance coil. For in this case the inductance would indeed have a high pure inductive reactance, and this would always be made large enough for whatever choking purposes it was required. But although considerable progress is being made in the design and construction of coils, coils still have distributed capacity. There is not yet a capacity-free coil.

Consequently let us consider a choke coil of inductance  $L$ , which has a distributed capacity  $C$ , and assume it to be connected in a circuit as in Fig. 1.  $I$  is an instru-

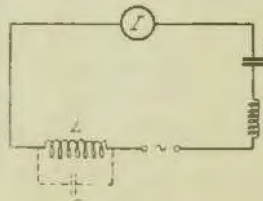


Fig. 1

ment, let us say, which is to be protected or from which current is to be excluded, and for electrical reasons may not be shunted by a protective condenser. The choke coil cannot be considered a pure inductive reactance, because there is a capacity reactance in parallel with it due to the distributed capacity of coil, neutralising the inductive reactance. Now it is not difficult to conceive that many cases may arise, where, in spite of the fact that the inductance is high, the distributed capacity may be sufficiently great to by-pass the current to be choked, and thus ruin the instrument which was to be protected. On the other hand, the choke coil may be so designed that the distributed capacity assists the inductance and makes the coil an efficient choke coil.

An inductance, therefore, when used as a choke, must be considered in conjunction with its distributed capacity. Every turn has a capa-

city to every other turn. These small distributed capacities add up to an equivalent total capacity  $C$  which is the distributed capacity of the coil as a whole. This capacity is generally considered to be in parallel with the inductance, as in Fig. 2. Consequently the coil has a natural period of its own which is according to the usual formula.

$$T = 2\pi \sqrt{LC}$$

By mathematical analysis the total impedance of such a combination may be found and at the natural frequency of the coil itself analysis shows this impedance to be given by the equation

$$Z = \frac{L}{RC}$$

in which  $Z$  is the impedance of the coil at its natural frequency,  $L$  its inductance,  $C$  its capacity, and  $R$  its resistance. Suppose this inductance is efficiently designed so that its resistance is negligible, that is  $R$  equals zero, then the impedance of this coil turn out to be

$$Z = \frac{L}{C \times 0} = \infty = \text{infinity}$$

That is when  $R$  is zero the coil has an infinite impedance. However,  $R$  is never zero, but the coil can be designed so that its resistance is very small, and in this case while the impedance does not become infinite it does become extremely great since  $R$  is very small.

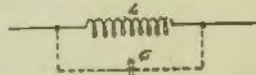


Fig. 2

This result shows that if  $R$ , the resistance of the coil, is negligible, the coil will have an infinite impedance to currents of its own frequency and will therefore absolutely choke currents of that frequency. If  $R$  is very small then the impedance will nevertheless be very great and will still be able to effectively choke currents of its frequency. Consequently to have an inductance coil act properly and efficiently as a choke it must be designed so that its natural frequency will be equal or nearly equal to the frequency at which it is to be used. This shows that a coil acts as a choke, not so much because it has a high inductance, but because it acts as a tuned circuit whose impedance

is very great at the frequency to which it tunes.

The above discussion and analysis is the basis of the so-called "frequency trap," which is nothing but a closed circuit of inductance and capacity tuned to the frequency of the current which is to be choked out of a line, see Fig. 3. This arrangement of capacity and inductance to tune to the given frequency is being satisfactorily used on such circuits as power lines, telephone lines, etc., but in radio sets becomes a little unwieldy, especially where experimental work is done, and in small sets where the number of elements is required to be a minimum and space is at a premium. Hence if possible it is far more desirable to develop and build small choke coils which in them-

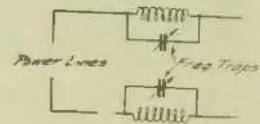


Fig. 3

selves, without the aid of external capacity, will not be efficient chokes. The results of the analysis given above show that if coils can be designed to have sufficient distributed capacity to tune with the inductance the object will be attained.

The most satisfactory kind of coil for this purpose is the multi-layer square section coil. These have been designed and built for a large number of frequencies, and have proved very efficient. It is not necessary to build a coil for each frequency, as it will be found by amateurs that a given coil tuned to a certain frequency will act as a very efficient choke over a fairly wide range of frequencies on either side of its natural period. Thus a 3 milli-henry coil was found to give very good choking action over a range of wave-lengths from 400 to 600 metres, while a 15 milli-henry coil which tuned to about 1700 metres, was found to be very satisfactory between 1500 and 2000 metres. These coils may be wound with various sized wires to accommodate different currents, but for average small power sets No. 22 wire was found to be satisfactory. As one



practical illustration of the use of these choke coils consider the oscillatory circuit of Fig. 4. This is a well known and widely used valve circuit for the generation of con-

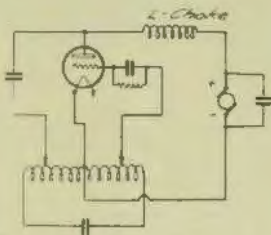


Fig. 4

tinuous waves, called the shunt circuit. The condenser across the generator is for the purpose of eliminating the commutator hum. In the circuit it is absolutely essential that an efficient choke be placed in the plate circuit of the valve. For the generator is practically shunted across the plate circuit of the tube and would act as a short circuit to the radio frequency voltage across the valve unless there were an efficient choke to prevent this. This

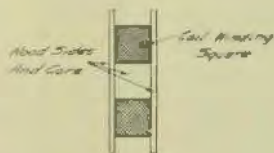


Fig. 5

is accomplished by the plate circuit choke L, and the most efficient choke for this purpose will be found to be the multi-layer square section choke mentioned above and shown in Fig. 5.

"I've never seen anyone so mean as that 'WDIV' chap—fancy hanging round a dry cell on a hot day like this!"

## The Howling Valve Nuisance.

By E. Joseph

(Continued from Previous Issue)

If using a single valve with regeneration, he must not allow it to oscillate, nor must he approach so closely to the point at which oscillation will occur, that any accidental impulse from within or without will exert a "trigger" effect. Bluntly, he must not be "greedy."

If using two or more valves, at least one of them should be a radio frequency amplifier, so that the regeneration is effected in the second or subsequent valves.

Action and reaction are always opposite and equal. Just as an impulse from grid to anode circuits is increased in magnitude, so is one from anode to grid decreased. So that the radio frequency amplifier for incoming signals acts as a radio frequency choke for outgoing ones. Therefore, if the second or subsequent valve does oscillate only an infinitesimal part of the oscillatory energy will reach the antenna, and

be radiated to the discomfort and annoyance of neighbours. The greater the number of stages of radio frequency amplification, the less is the likelihood of your interfering, the better are the results you are able to obtain, and the more interesting becomes the control of the set. Further, a radio frequency amplifier circuit requires a smaller expenditure of your spare cash than does an audio one. The cost of a radio frequency transformer and a variable condenser for tuning it, is considerably less than the cost of an audio frequency transformer. The latter is far more likely to break down, and in the event of it doing so, is far more troublesome to repair.

It should be unnecessary to go into the question of how to control circuits to prevent interference. Every book or periodical one

### Get Your Wireless Gear at Electricity House

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

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, 7/8 each; Calibrated Dials, 1/6 each; Knobs, 1/8, 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, 36/-; 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.



peruses gives numerous circuits and schemes, so that it is unnecessary to print diagrams.

If potentiometer control is used on the grids, a separate one should be used on the regenerative valve, and the finer the adjustment it will permit, the easier will be the control of regeneration. If grid condenser control is used, it should be by means of a finely adjustable variable one. The author has been using a condenser of a type which

has recently appeared on the market, which, at the valves usually required for a grid condenser, permits of very fine adjustment, and his method of control is as follows:

Having picked up the carrier wave, using a very small value of grid condenser, tune the secondary circuit to give a beat note of fairly high pitch, this being obtained with the secondary "under tuned," loosen the reaction coupling until oscillation ceases, then gradually increase the grid condenser until the desired sounds come in loud and clear. If it is over done a slight reduction of the condenser will correct it.

Many other methods will occur to the experimenter, and they will all give consistent results if handled with care and intelligence. Where a soft valve is used, a vernier adjustment of the filament rheostat serves very well. An "A" battery potentiometer, to the sliding contact of which the "B" battery is connected, also answers well with soft valves, but with hard ones neither of these is of much use, and grid control must be reverted to.

In most cases, even when micro-meter adjustments of the usual kind are fitted, the author has found that adjustment of "inductive reaction," or, in unscientific parlance, of the position of the "tickler coil," is not sufficiently fine.

RECORDING HIGH-SPEED SIGNALS.

The results of research by the research department of the Radio Corporation of America are given in the Proceedings of the Institute of Radio Engineers. The requirements of high-speed recording apparatus are first discussed, and the relative merits of various types of recording equipment are then dealt with. A new form of recorder, called the "ink recorder," is next described. The essential parts of the recording system are as follows: A small circular coil is placed in the radial field produced by a powerful solenoid type of electromagnet, and a link rising from the coil frame engages the pen arm. The latter is supported at one end by a thin, wide steel spring, and carries at its other end a short piece of metal tubing about half an inch long, called the pen. The pen takes ink from a device called the "ink feed" at one end and writes on the paper tape at the other. If the magnet is energised and signal current passes through the small coil, it is pulled upward. The link, therefore, pushes the pen arm up; the pen moves upward in the head of ink on the face of the ink-feed nozzle, supplying itself with ink by capillary action as it goes, and makes a vertical line on the slowly moving tape. When the signal stops the spring sends the coil back to its starting position.

Test and Conquest



ON the Trans Atlantic telephone test when the American Telegraph and Telephone Company's officials in New York addressed a distinguished assembly of experts and others at New Southgate, London, Western Electric Head Receivers and Western Electric Loud Speaking Receivers only were used at the London end for the reception of the messages.

Western Electric

Co. (Australia) Ltd.  
192 CASTLEREAGH STREET, SYDNEY

HON. RADIO INSPECTORS.

In another portion of this issue of Wireless Weekly is published an open letter to the amateurs of New South Wales from the four Honorary Radio Inspectors, Messrs. Crocker, MacLurean, Robinson, and Stowe. This letter practically speaks for itself, hence there is very little need for us to make any comment regarding it. We feel sure that every genuine amateur will realise that the Honorary Inspectors are giving up a good deal of their time and energy purely for the good of the amateur movement. It behoves every holder of a license to do his utmost to assist them in every manner. Wireless Weekly hopes that all its readers will look upon the inspectors as the guardians of the experimenters' best interests.





**LEICHHARDT J. T. SCHOOL RADIO CLUB.**

A Radio Club was formed at this school last November.

Since then the membership has increased from six to twenty, all of whom are really interested in experimental work. The science teacher (H. Williams) has installed at the school a loose coupler crystal set, constructed by himself.

It is licensed, and it is at the disposal of the Club.

The Club is self governing, and meets every Friday afternoon for buzzer work and lectures on the elementary principles of wireless.

ECM (Mr. MacLurean) was picked up on Sunday night.

The music was distinctly heard, but the speech was not quite clear.

A little adjustment will improve the letter, we hope.

Amalgamated Wireless was heard last Tuesday night.

The music was distinct and the speech perfect.

The Secretary (C. Hannah) a keen wireless enthusiast is one of the senior pupils.

**PARRAMATTA CLUB.**

The first general meeting of the Parramatta Amateur Radio Club was held on Thursday, May 24th, at Electricity House, Church Street, Parramatta, near Weston Road. There was a good attendance of enthusiastic amateurs.

Mr. Herbert J. Ramsey, J.P., Dundas, was elected President. Messrs. Owen and MacDonald, of Merrylands, Vice-Presidents; Mr. H. Melville, Hon. Secretary.

The subscription was fixed at £1 per annum for adults, and 10/- for juniors.

It was decided to apply for a licence at the club premises, and to make arrangements for erection of aerial.

Most of the parts necessary for a crystal set were donated, and at the meeting of Thursday next, a start will be made to assemble this as the first part of the set. The

offer of Mr. Melville to supply a room for club-room was accepted. Radio enthusiasts in Parramatta and surrounding districts are requested to communicate with the Secretary or President.

**NORTH SHORE RADIO CLUB.**

The annual general meeting and election of officers was held by the Club in its building, corner of Alfred and High Streets, North Sydney on Tuesday, 22nd inst., and the following were elected:

President: H. M. Plauner.  
Vice-Presidents: S. A. Grace and R. McIntosh.

Hon. Secretary: J. O'Brien.  
Hon. Treasurer: C. Magonie.  
Committee: Messrs. Plauner, McIntosh, Grace, O'Brien, Magonie, Kruckow and McClure.

Hon. Auditor: N. Pitcairn.  
Publicity Officer: S. A. Grace.

Reports of progress of the Club and work of its members were particularly interesting and satisfactory to all concerned.

At the termination of the business portion of the meeting Mr. Magonie received on his newly constructed apparatus the special call of station 2GR (Mr. Marks, of Rose Bay) who was kind enough to broadcast selec-

**Aerial Gear**

Cast Gun Metal SCREW-EYE, SHACKLE AND PULLEY BLOCK, complete, ready to screw to mast.

Also, Cast Gun Metal UNION SCREWS for tightening Guy Wires, in two sizes:—

Heavy, 5in. take-up, 3/8in. screw.

Light, 4 1/2in. take-up, 5/16in. screw.

No aerial complete without these essentials. Will keep the tallest mast straight and steady in all weather.

Obtainable from all leading Wireless Stores, or direct from maker.

Mast bands, screw-eyes, eye-bolts, and other brass or gun metal castings, also made to order by

**V. Greenup**

Brass Founder

119 Farr Street, Rockdale

**ALL the latest American Wireless Journals and Books on hand.**

**STOCKS ARRIVING BY EACH MAIL**

Back numbers on hand. Call in and inspect my stocks. Clockwork trains and toys of all kinds.

**Sullivan's Electric Shop**  
296 Pitt St., Opp. W. & S. Board.



**RADIO COLLEGE**

Associated with Radio Company, 18 Elizabeth St.  
 The next class commencing first week in June. All those desiring to learn the principles of this fascinating hobby enrol now.  
 Complete Course . . . £5/5/-  
 Correspondence . . . £4/4/-  
**23 LANG STREET**  
**F. B. COOKE,**  
 Principal.

tions for the Club's entertainment. Incidentally it may be mentioned the call was also picked up at Armidale.

At the previous weekly meeting of the Club an interesting discussion took place in connection with the use to which the Electrical Suburban Supply System of Street Cables could be put as suitable aerial. An ingenious device in the form of a compensating condenser was constructed at the meeting and a sim-

ple circuit was devised showing how all A.C. hum could be eliminated. One experimenter was unable to be picked up on a good aerial. Such a simply constructed small instrument plugged into the ordinary electric light socket would prove to be most efficacious in flats and dwellings where the erection of aerials would be inconvenient.

The usual weekly meetings of the Club are held as above on Tuesday evenings at 8 p.m.

The Club is always pleased to welcome visitors.

**ILLAWARRA RADIO CLUB.**

The 23rd meeting of the Club was held on 22nd inst., with a fair attendance. After formal business (including the election of three new members) had been dealt with, Mr. Atkinson (Vice-President) introduced to the meeting Mr. F. Swinburne (President of the Manly Club) and after speaking of the latter's wide experience in wireless matters, called on him to address the members.

Mr. Swinburne then proceeded to deliver what proved to be a most interesting lecture on the "Fac-

tors governing the choice of Apparatus." This was a matter, the speaker said, which depended largely on the type of amateur concerned, who might either be the individual who merely wanted to listen in, with no particular desire to delve into the experimental aspect, or the genuine experimenter whose object was to follow definite lines of experimental practice. In the former case it was a simple matter to decide on the class of set required, which would for the most part be used for telephony and could take the form of the self-contained cabinet type of fixed design and construction. For the experimenter, however, such a type of set would not serve, as in his case it was necessary that the various parts should be adaptable and easily accessible allowing of various changes of circuit being made. The lecturer described the various panel types and their advantages and disadvantages, touching on general appearance, layout, and mechanical and electrical advantages of the many designs under review. A great number of very useful tips and hints were given relative to the mounting up of different units, placing of terminals, wiring, etc., and circuits were also shown. The lecture was quite out of the ordinary and very much appreciated, giving as it did such a great amount of practical constructional detail, which was of direct interest and help to all members.

Mr. Swinburne was given a very warm reception, and at the conclusion of his lecture a hearty vote of thanks was accorded him. In responding he said he would like to see more interchange of visits by members of the various clubs, introducing at it did new lines of thought and the exchange of ideas. He would be pleased to see members visit the Manly Club at any time.

Mr. Atkinson then reported the result of the last meeting of the Radio Association, when the election of officers had taken place. He also read letters which had been sent by the Association to the Controller of Wireless with representations that the interests of the genuine experimenters should be protected at the forthcoming Conference, and also that the N.S.W. Radio Inspector should be empowered to issue and cancel licenses to obviate the delay occasioned by all applications having to go to Melbourne; a letter from the Controller

**Winter is Near**

Radiators from 55/-

British Electric Globes 1/3 each

Electric Irons 20/-

**J. J. Hoelle & Co.**

57 Goulburn Street

Factory: 49 ALMA STREET, DARLINGHURST



June 1, 1924.

## WIRELESS WEEKLY

15

was also read relative to the appointments which had been made of the four Hon. Radio Inspectors for this State.

The next Meeting of the Club will be held at the Club-room, 75 Montgomery St., Kogarah, on Tuesday, 5th June, at 8 pm, when a lecture will be given. All interested are cordially invited to attend. Anyone requiring information concerning the Club are kindly asked to communicate with Mr. W. D. Graham, Hon. Sec., 44 Cameron St., Rockdale.

## NEWCASTLE AND DISTRICT RADIO CLUB.

A special general meeting of the Newcastle District Radio Club was held at the Club-rooms, 25 Winship St., Hamilton, on Wednesday, 23rd May, 1924.

The membership of the Club has grown to such an extent that it was found necessary to make some restriction, and the required number being present for a quorum, the business was proceeded with.

The resignation of Mr. N. P. Olsen, as Secretary, was accepted and Mr. L. T. Swain elected in his place.

A motion was passed that the constitution of the Club be altered as follows:

"That the Club be re-organised on the following lines: Restricted membership to 30, subscription be increased to 3/- per month, and the entrance fee be increased to ten shillings and sixpence, and meetings be held fortnightly."

Mr. N. P. Olsen accepted the office of Editor for the Club.

Two new members were admitted and the President declared the meeting closed.

The Club has its transmitting license, and is now on the look out for more suitable premises to install their transmitting set, which is being made by the members.

An interesting lecture has been arranged for the next meeting.

## LEICHHARDT AND DISTRICT RADIO CLUB.

The members of the Leichhardt and District Radio Society held their 31st general meeting at the Club-room, 176 Johnston St., Annandale, on Tuesday, May 22nd, when many important matters were discussed, including a proposal to alter the Society's meeting night to Monday instead of Tuesday as at present constituted. This im-

portant matter will be dealt with at the business meeting to be held on Tuesday next, June 5th, and a big roll up of members is anticipated to decide this important question.

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

## WAVERLEY AMATEUR RADIO CLUB.

Mr. Howell took the chair at the meeting of the 17th May. The Secretary mentioned the matter of Mr. Hector's invitation of Thursday last at the All Clubs' Night, to view his "colour organ." It was decided to accept, the date to be left to Mr. Hector. A letter was received from a country club, asking that the W.A.R.C. send its rules for the guidance of the new club, which is just forming. Mr. G. Thompson then gave an interesting talk on "General Tuning."

## KILLARA RADIO CLUB.

On Friday, 18th May, a Club was successfully launched in the Killara district, 12 members being enrolled, others who were unable to attend the inaugural meeting, have promised their support.

The following officers were elect-

ed: President, Rev. A. P. Campbell; Vice President, Dr. H. R. Greenwell; Secretary and Treasurer, Mr. A. H. Gray; Committee, Mr. Hurl, Professor Woolnough, and Mr. Gill.

After the business was finished, members listened in to music from 2KC and 2UW, the set being lent for the evening by Mr. A. H. Gray, this entertainment being much appreciated by those present. The Club is very fortunate in having among its members the Hon. Secretary, and Messrs. Hurl and Gill, who are keen experimenters of much experience. Meetings will be held fortnightly, from the 18th. Intending members please communicate with the Secretary, "May-longh," Florence Street, Killara; or ring J2601.

## CANTERBURY RADIO CLUB.

On May 17th a meeting of those interested in wireless was held at Canterbury (Victoria), for the purpose of forming a radio club. There was a good attendance, and after drawing up a constitution, the following officers were elected:—President, Mr. R. H. Dixon; Vice-Presidents, Messrs. K. Fryer and J. Givens; Secretary and Treasurer, Mr. G. S. Dohrmann; Committee-men, Messrs. J. Anderson and W. Holtz.

## WHEN THE Radio Bug Bites

AND YOU ARE LOOKING FOR RADIO "SIGNS."

## HEED THE WORDS OF THE WISE.

This is what Mr. H. A. Warden, of Gulgandra, has to say about MYERS' VALVES, in a letter to us:—

"Using a High Frequency Amplifier, MacLurean's concert came through so clearly at times as to be distinctly heard by a person standing by with no phones on his head. Considering the distance, 310 miles, and the fact that only two MYERS' were used, I think the fact speaks for itself. For quiet working and clarity they easily eclipse any valve I have used, with the exception of an old audiotron of mine."

You all know Mr. Warden, late of Mungundi, as one of the premier radio men of Australia. We can show you the original of his letter at our place any time.

NOTE OUR NEW ADDRESS—

## RADIO HOUSE

619 GEORGE STREET, SYDNEY

(Next Goulburn Street)



Amateur Calls

Victoria

Call Sign.	Name.	Address.
3 B D	Cox, E. H.	5 Gibson Street, Elsternwick. T.
3 E I	Fitchett, J. C.	Salisbury Street, Balwyn. T.
3 H H	Rowe, H. K.	"Lindum," Ferncroft Avenue, East Malvern. T.
3 B Q	Bowden, W.	Hill Street, Box Hill. T.
3 B Y	Holst, H.	27 Bambera Road, Caulfield. T.
3 D V	Bentlie, H. S.	1 Bishop Street, Box Hill. T.
3 A Y	Jenvey, W. W.	12 Lord Street, East Caulfield. T.
3 O K	Conry, W. H.	32 Irving Avenue, Armadale. T.
3 R F	Cordingly, C. H.	77 Bank Street East, Ascot Vale. T.
3 B G	Humberg, S. G.	Waverley Road, East Malvern. T.
3 O C	Saunders, J. H.	10 Wilson Street, Prince's Hill. R.
3 O D	Deane, M. M.	3 Quat Quatta Avenue, Elsternwick. R.
3 O E	Clifford, R. S. M.	110 Bowen Crescent, Prince's Hill. R.
3 O F	Golding, W. A. G.	108 Mont Albert Road, Canterbury. R.
3 O G	Menon, G. F.	6 Argyle Street, St. Kilda. R.
3 O H	McMahon, W.	Camperdown Street, Brighton. R.
3 O I	Farr, H. E.	224 Nicholson Street, Footscray. R.
3 O J	Kennedy, T. McM.	48 Beaconsfield Parade, St. Kilda. R.
3 O L	Morrison, S. A.	Macarthur Street, Bairnsdale. R.
3 O M	Han, R. C.	36 River Street, Newport. R.
3 O N	Nixon, A. E.	106 Albert Street, Windsor. R.
3 O O	Hart, J. G.	69 Church Street, Brighton. R.
3 O P	Bence, R. R.	47 Withers Street, Albert Park. R.
3 O Q	Milliken, L. C.	72 St. Alban's Road, East Geelong. R.
3 O R	Gamon, H. L.	93 The Grove, Moreland. R.
3 O S	Cano, S. C. F.	28 Alma Road, St. Kilda. R.
3 O T	Cameron, R. M.	Coonil Crescent, Malvern. R.
3 O U	Callaghan, C.	Wood Street, Preston. R.
3 O V	Clowes, F. A.	Melbourne General Cemetery, Carlton. R.
3 O W	Chomese, A.	7 Victoria Street, Warragul. R.
3 O X	Cox, A. C.	19 Orange Grove, St. Kilda. R.
3 O Y	Carter, A.	11 Izett Street, Prahran. R.
3 O Z	Brown, A. G.	70 Swan Street, Richmond. R.
3 P A	Peachey, A. L.	94 Mitford Street, St. Kilda. R.
3 P B	Conthroy, Chas.	23 Westbury Grove, East St. Kilda. R.
3 P C	Deverall, R.	Neill Street, Sandbury. R.
3 P D	Stewart, R.	44 Edsall Street, Malvern. R.
3 P E	Richardson, J.	23 Ligar Street, Bendigo. R.
3 P F	Oldmeadow, D.	95 Ormond Esplanade, Elsternwick. R.
3 P G	Adener, — F.	133 Sackville Street, Kew. R.
3 P H	Rutledge, E. E.	45 Warley Road, East Malvern. R.
3 P I	Shrith, K. —	47 Barkly Street, St. Kilda. R.
3 P J	Smyth, P. L.	10 Keera Street, Geelong West. R.
3 P K	Potter, Robert	31 Barry Street, Kew. R.
3 P L	Benowden, P.	34 Lawisham Road, Windsor. R.
3 P M	Patterson, R. I.	82 Bourke Road, East Malvern. R.
3 P N	Wallace, E. S.	71 South Crescent, Northcote South. R.
3 P O	Roberts, A. H.	103 Bent Street, Northcote. R.
3 P P	Boyce, L.	59 Blair Street, Moreland. R.
3 P Q	Johnston, B. R.	27 Park Grove, Middle Park. R.
3 P R	Blackman, H. H.	44 Osborne Avenue, East Malvern. R.
3 P S	Mason, C. A.	32 Bankins' Road, Kensington. R.
3 P T	Revell, J.	27 Weir Road, Canterbury. R.
3 P U	Begg, J. D. W.	Lucy Street, East Malvern. R.
3 P V	Millman, W. H.	7 Edmund Street, Clifton Hill. R.
3 P W	Fleming, H. B.	Melba House, Main Street, Croydon. R.
3 P X	Morris, H.	12 Hutcheson Street, Moonee Ponds. R.
3 P Y	Huxtable, A.	8 Drysdale Street, Wentthaggi. R.
3 P Z	Frazer, A. G.	25 Spencer Road, Camberwell. R.
3 Q A	Pitman, H. E.	227 Humphrey Street North, Ballarat East. R.

The Canterbury Radio Club will meet at 7.45 p.m. every second Thursday, commencing May 31st, in the Congregational Schoolroom, Hopetoun Avenue, and arrangements are being made for buzzer practice and instructive lectures.

For further information, apply to the Secretary, Mr. G. S. Dohrmann, 2 Hopetoun Avenue, Canterbury, Victoria.

CROYDON RADIO CLUB.

A successful meeting was held on Saturday night, when a new club was formed at Croydon. About 40 attended. The Club decided to meet every Saturday night from 7.30 to 10 p.m. at "Rockleigh," Lang St., Croydon.

Anyone interested in Radio who wishes to become a member please communicate with G. Maxwell Curtis, "Carwell," Highbury St., Croydon.

NORTHBRIDGE AND DISTRICTS WIRELESS EXPERIMENTAL SOCIETY

At the Society's rooms, Sailor Bay Road, Northbridge, on Wednesday evening, May 23rd, Mr E. C. Beard gave an interesting lecture on the "Elementary Principles of Wireless."

Mr. Beard explained his subject in detail which was thoroughly appreciated by the members present.

Another interesting lecture will be delivered by Mr. Beard on Wednesday, May 30, when members are reminded to be in attendance at 5 p.m. sharp. New members should send in their names to the Hon. Sec., without delay and take advantage of these highly interesting elementary lectures.

The technical committee have the club equipment well under way and is nearing completion.

This club is open every night in the week and it is gratifying to see the large number of members taking the opportunity of indulging in code practice. A member of the technical committee is in attendance each evening ready to assist the novice in his work.

During the week members turned up in full force to listen to the various concerts. Although only formed this month the club has a membership of over thirty. In order to receive immediate attention, enquiries should be addressed to the Hon. Sec., Mr. A. H. Vincent, "Abbeville," Sailor Bay Road, Northbridge.



June 1, 1923

WIRELESS WEEKLY

17

It is proposed to hold a dance on the 9th June, at the St. Thomas' Memorial Hall, Macleura Street, North Sydney, when wireless music will be demonstrated to the members and friends.

The next general meeting of the Society will be held on Wednesday, May 30, at the club rooms, Sailor Bay Road, Northbridge. New members are requested to be in attendance at 7.30 p.m.

BALMAIN DISTRICT RADIO SOCIETY.

At the usual weekly meeting held last Tuesday evening, at the Society's room, a very interesting demonstration in the reception of Radio Telegraphy and Telephony was given by the Hon. Secretary, Mr. P. G. Stephen.

Telephony items etc., from 2JM and 2GR being heard throughout the room on one valve, many other telephony items heard from other stations.

Telegraphy both damped and un-damped systems, included Australian Coast Stations, New Zealand, Dutch, New Guinea Stations, Japan, American Naval Stations in Pacific, and several high power stations in the United States of America.

All the above were copied on one valve.

It may interest the owners of the following stations that their tests have been heard: 2CM, 2CL, 2DK, 2DS, 2FA, 2CI, 2BB, 2IX, 2JM, 2KC, 2LI, 2MB, 2GR, 2XX, 2JL, 2MC; many others have been heard, but no call signal being heard.

The Society's transmitting apparatus was in operation last week. Tests being confined to small wave lengths, viz.: 175 metres, using only 2 watts, reports show that speech, music and Morse were well received.

Further tests will be carried out later, and anyone hearing tests are invited to send a report in. Call signal is 2ZB.

The Society would like others to know that any person or persons causing interference in the Balmain district will in all probability receive a visit from either the Chief Radio Inspector or one of his staff.

Owing to weird canary-like noises heard at the Society's room, it points out that there are many unskilled valve operators in the District, and no time will be lost in

endeavouring to prevent such interference.

The membership is steadily increasing and lectures and demonstrations given by members of the technical committee are much appreciated by all.

All inquiries re activities of Society can be obtained from

F. W. Record, Hon. Sec. (pro tem), 77 Grove St., Balmain.

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

*An Open Letter to the Amateurs of New South Wales.*

Gentlemen,

When the Federal Government issued the amended Wireless Regulations towards the end of last year, it was decided to appoint Honorary Radio Inspectors in each State. These Honorary Radio Inspectors were to assist the State Radio Inspectors to administer the regulations as applied to amateurs.

As most of you are aware, we have been appointed Hon. Inspectors for New South Wales and have now commenced operations. Our duties are to inspect amateur stations and to see that the owners abide by the Commonwealth Wireless regulations.

A very small minority of the amateurs is inclined to regard the regulations as cumbersome and unnecessary. We feel sure, however, that the great majority does not view the matter in this light, but on the other hand realises that strict adherence to the rules laid down by the Wireless Branch is necessary for successful working of all classes of traffic, commercial and amateur.

The Wireless authorities are de-

sirous that a harmonious relationship should exist between themselves and amateurs. We, as representatives of that department can but re-echo that feeling.

In other parts of the world, lax control of amateur stations has resulted in chaos in the ether. Australia has benefited by the unfortunate experiences of other nations and the Australian Wireless regulations if strictly adhered to by all amateurs should ensure smooth working.

We feel sure that practically all amateurs will accord us their heartiest support in connection with our duties and will realise that in insisting on a thorough compliance with the regulations by all experimenters we are simply defending the amateur movement.

Strict adherence to the regulations is the amateurs' strongest line of defence.

Yours faithfully,

(Signed)

- E. B. Crocker
- C. M. Macleuran
- H. E. Stowe
- J. W. Robinson

(Editor "Wireless Weekly.")

Sir,—Midst your valued paper last week I read "A Few Suggestions," by E. Joseph. In the third paragraph reference is made to the mysterious "Mott" signals. Now, with this reference I will write you the following:—

During the week that the mysterious "Mott" signals were heard, members of the Western Suburbs Amateur Wireless Association were quite awake. The following just goes to show that there are really some experimenters who do think of loops.

At a meeting of the Technical Committee of the W.S.A.W.A. it was resolved to "get after Mott," and so they set to work. First, Mr. L. Brown decided to work at his station, with Mr. Challenger at the station some half mile or more apart. This was cut short when a map of metropolis was not available to plot the readings of both stations. Next thing to do was to build a smaller loop, 2ft. 6in. square, and then hitching it to a 4-valve set, they set off after "Mott." Messrs. Atkinson, Brown, St. Hill, Barmann and Challenger



arranged themselves in "column of route formation," with each something to carry, and with set, battery, loops and planes, they set off marching the streets, much to the curiosity of the public, after "Mott," and were enough if Mott had kept going one night longer W.S.A.W.A. would have known him. The experiment proved very interesting and numerous other stations had directions defined from the club station. They further think that some of the howling valve close to their station will soon stop, as the loop is small enough to get inside any old back yard.—Yours faithfully,

GEO. R. CHALLENGER,  
Trustee W.S.A.W.A.

(To the Editor of "Wireless Weekly.")

Dear Sir,—In a recent issue of the "Sydney Morning Herald," a correspondent calling himself "An Amateur," makes several statements regarding the genuine wireless experimenters attitude towards wireless telephony, newly formed Australian Relay League, &c., which I consider calls for some comment. The implication is in his statement that a person who concentrates in the reception of telephony or wireless music, is not a genuine experimenter, and he also states that the genuine experimenter only takes a casual or pastime interest in this branch of the science. There is also a statement that the recently formed Australian Relay League realised the above remarks. This last statement appears to me not a fair way of putting the case. In the first place the Australian Relay League was formed to relay wireless messages, if possible, around Australia, and consisted entirely of experimenters holding transmitting licences or about to obtain such licences, and no one can become a member unless so situated. Primarily the object of calling the transmitters together was to transmit messages and also to assist one and another in regulating our transmitting stations, so I and others understood. Receiving was a secondary consideration, although important. There was no resolution passed or put to our meeting to the effect that a person spending his time and money perfecting his receiving station for the reception of telephony was not a genuine experimenter, or that the genuine experi-

menter only took a casual or pastime interest in this part of the wireless science. He also states that the League recognised if they are to become an asset to the country they must concentrate their efforts on continuous wave telegraphy. Up to about six months ago, short wave wireless telephony had not been experimented with in Australia to any extent, but during this short period quite a number of persons holding experimenters' licences have made and assembled transmitting sets, some using only a one five watt tube have succeeded in transmitting speech and music clearly, as far north as Toowoomba, in Queensland, and Melbourne, Victoria, and a number of persons also holding experimenters' licences, and in the case of the Queensland stations' reception, have succeeded in receiving Sydney's amateurs speech and music, using only one receiving valve, a distance of about 500 miles. Truly a meritorious performance.

Again, our leading experimenter only a little over a week ago transmitted speech and music, using very low power, to New Zealand, and this again was received by an amateur. Is it fair to imply that these men are not genuine experimenters? The suggestion that the genuine experimenter only takes a casual or pastime interest in telephony, whether in receiving or transmitting, I think, will be assessed at its real value by those of any experience. I am prepared to state definitely that the leading and genuine experimenters will, must, and are still taking more than a casual interest in wireless telephony, whether it be transmitting or receiving. I think it was Mr. Fisk, whilst in England, who stated "that the time was not far distant when people living in England would be able to speak to their friends in Australia. If this ever comes true, and most of us think it will, it will be brought about by experiment, and the Australian experimenters in telephony, the genuine, not the pastime ones, can and will try their luck in helping to bring about this result. Anyhow, give them a chance, and judging by past results, I think they will make good, but not if you make them feel they are not appreciated, or are not an asset to the country.

In conclusion, I am a member of the new Australian Relay League, and entirely in sympathy with its object, which is not, and need not be, opposed to experimenters in

wireless telephony, transmitters or receivers. I wish it every success, hence my reason for this letter, knowing that no such remarks were suggested at our meeting.

E. B. CROCKER.

WIRELESS INSTITUTE OF AUSTRALIA.  
N.S.W. DIVISION.

The next meeting of the N.S.W. Division of the Wireless Institute will be held on the 14th June, in the Chamber of Commerce Buildings, George and Grosvenor Streets.

AUSTRALIAN RADIO RELAY LEAGUE.

The next meeting of the committee will take place on Monday, 4th June, at The Royal Society's Rooms, Elizabeth St., at 8 p.m.

GONE IS THE RESPECTED CITIZEN.



Once I could not pass by where the deadly stuff is sold and never but an eye. To-day, alas, my feet carry me into the open doors where temptation lurks: I am no longer strong enough to "take it or leave it alone."

MODELS

Vertical Steam Dynamo Engine, 17/8in. x 2-7/8in. cyl., 6-3/4in. Flywheel, 580 r.p.m., 1 hp.

O. BURNABY BOLTON

Daily Telegraph Building,  
KING STREET, SYDNEY



Experimental Stations Transmitting This Week.

	7.30 to 8.	8 to 8.30	8.30 to 9.	9 to 9.30	9.30 to 10.
Monday	2OB	2BB			
Tuesday	2MB	2MB		2GR	
Wednesday	2LI	2GR			
Thursday	2LI	2KC		2GR	
Friday		2KC			
Saturday	2LI	2BB	2GR		
Sunday	2CM	2CM	2CM		

WIRELESS NOTES.

A NEW LINK IN THE AERIAL MAIL.

America has just announced a sixteenth radio station for the Air Mail Department of the Post Office. The other fifteen links in the great Trans-Continental wireless chain are well scattered. This new one, which is located at Chicago, will have a radio telephonic apparatus besides the usual radio telegraphic outfit, so that experiments in connection with night flying may be carried out. The only other air mail station to have this apparatus is the Washington Post Office Department. The huge chimney belonging to the Speedway Hospital will be used to support the antenna of the new station, and the air mail at Speedway Field will then use it for regular radio business. Till now, the Great Lakes Naval Radio Station has been used, but this is fully forty miles distant from Speedway Field, and the P.O. Department rightly deemed it best to have its own station.

THE RIGHT TO RADIO.

Whether any one person has the right to use his transmitter and fill the ether with his radio messages, whilst others on the same wavelength want to "listen-in" to entertainment programmes, is the question that is occupying the Circuit Court of Pontiac, Illinois. It appears that Wiley Bergman, of Dwight, Illinois, who owns a transmitting station likes to make use of it during broadcasting hours when concerts and other entertainments are set forth. Edward McWilliams, of the same district, who owns only a receiving set, has filed suit to restrain Wiley, giving as his reason that his (Edward's) service, as well as that of twenty other "fans" of the district, is interrupted, so that they cannot "listen in" to the concerts, etc. McWil-

liams asks for a Court injunction to restrain Bergman from transmitting whilst recognised stations are broadcasting entertainments. Amateurs and operators, and the legal fraternity of Illinois, are watching this case with great interest, for it is the first of its kind in that State.

A RADIO MIDGET.

The smallest radio receiving set in the world is the invention of a Peckham man, Mr. C. Sanders, who claims that it will receive all wireless messages and concerts within a radius of 90 to 100 miles. It looks rather like a tie pin, but when connected up to an aerial, it easily picks up messages from ships in the English Channel and North Sea, also the London broadcasted concerts. It weighs less than an ounce, the minute coils of wire being twisted round the stem of the pin with a small crystal at the one end. The next size larger will easily fit into an ordinary match box.

RADIO AS BENEFACTOR.

A simple little instrument called the Ossiphone, invented by Mr. S. G. Brown, of London, is the means of allowing the totally deaf to "listen in." Used in connection with a radiophone, this little device enables a deaf person to "hear" (though not in the same way as you and I, exactly the same sounds as an ordinary "listener in" with a head set. The sound is transmitted to the brain by means of the bones, instead of, as in the ordinary way, the ears. The wires of the Ossiphone are connected by an ordinary receiving set in the place of the headphones, the "listener in" holds the instrument in one hand and presses the knob of the vibrator against the knuckle of one of the fingers of his other hand. This sounds miraculous, but it is true.

THE OSSIPHONE ITSELF.

It looks rather like an enclosed telegraph key. It is a small ebony box about an inch high and four inches long. At one end is a slot, from which a metal vibrator knob protrudes. At the other end double wires are fitted (heightening the resemblance noted above). This resemblance disappears when you lift the lid of the box. The vibrator is then seen to pass between what is more or less like the inside of a telephone receiver with a bar vibrator instead of a diaphragm. This is a magnet shaped like a horse shoe, the poles of which have been wound with wire. In use, the Ossiphone is not unpleasant, neither does it induce nervous strain, because the vibrations are so delicate that the bones which do the "hearing" do not vibrate.

HOW IT IS DONE.

From the bow of the lifeboat, a wire, heavily insulated, is run along one side of the keel and back to the stern, inboard, and back again via the scupper to the bow on the same side of the boat. From here it goes aft along the other scupper, over the stern and forward again via the keel, thus forming a two turn loop. Both terminals are connected with the radio telephone installation, which has its home under the canvas sprayhood. Both receiving and transmitting over the usual cruising range of a lifeboat can be easily managed by means of the new antenna and the lifeboat can thus keep in connection not only with her base and with the vessel she is helping, but also with other nearby ships. The installations are expensive, but experiments are being conducted at Curtis Bay Station (south of Baltimore, U.S.A.) with Western Electric equipment. This type was used during the war on submarines and submarine chasers.

TRAVELLING NO LONGER TEDIOUS.

Between Geneva and Paris a commercial aeroplane passenger service has for some time been in existence. Fourteen passengers are taken across at a time, and a receiving set has just been installed upon several planes. Concerts broadcasted from Lausanne (Switzerland) are readily picked up and greatly enjoyed. Should aeroplane receiving sets become general, it will be possible for harassed M.P.'s to keep in touch with their respective organisations whilst covering territories many miles away. This scheme, however, is yet in every sense only "in the air."



**QUESTIONS**

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

**Question Coupon**  
To Information Editor

AVAILABLE TILL 5-6-23

NAME \_\_\_\_\_

Address \_\_\_\_\_

FOR 2 QUESTIONS ONLY

“Barrington,” Parramatta asks:

Q. (1): Could I hear music from Strathfield at Parramatta, and what amateur stations will I hear with a loose coupler receiving set, phones 4000 ohms, 2 wire aerial, 60 feet long and 30 feet high?

Q. (2): May I erect my aerial while waiting for my license, which I have applied for?

A. (1): If properly tuned you should hear 2CM and probably all the stations published in this issue under the heading “Amateur Stations Transmitting This Week.”

A. (2): Apply to Radio Inspector, 6th Floor, Macdennell House, Pitt Street.

J. A. P. Huskinson asks:

Q. (1): My aerial is 85 metres from Sydney in a straight line. Can I receive readable speech and music with the following instruments: Single valve detector (panel type), 1500 metre loose coupler, 3000 ohm Murdoch phones, phone condenser only. My aerial has a natural wave-length of 200 metres, will make it longer if necessary?

Q. (2): Will a single wire aerial 200 feet long, 70 feet high, be just as efficient for receiving as same length of double wire loop aerial?

A. (1): Don't increase your aerial, it is large enough. You should have a variable condenser in your set for the necessary fine tuning.

A. (2): Better two wires 70 feet high and 150ft. long, “T” type would make a first-class aerial.

“A. L. C.,” Leeton, asks:

Q. (1): Would the new radiotron WD dry cell valve be sensitive

enough to receive 2CM's music at Leeton?

Q. (2): Where can I get a complete Morse Code chart with all punctuations?

A. (1): As far as we know the valve you speak of is as sensitive as any other, and 2CM is heard on a one valve set in Melbourne. The tuning is very critical.

A. (2): Apply to any advertiser in “Wireless Weekly,” and they will be able to supply your requirements.

“B.S.C.,” Granville, asks:

Q. (1): Could I receive music at Granville with a loose coupler set without a variable condenser, with 2000 ohm phones, a 100 foot single wire aerial 30 feet high?

Q. (2): Which is the best aerial—a single or double, 100 feet long?

A. (1): Music is very sharply tuned, and if you don't happen to be able to get the exact wave-length on your tuner you will miss it. It is almost essential to have a variable condenser.

A. (2): We think a double aerial 100 feet will be best.

“A.E.W.,” Scarborough, asks:

Q. (1): Can you tell me the cause of my signals fading. Strong signals come in and then fade away until they are unreadable, and in some cases come back strongly before the message is finished. I have examined all my connections, and they are O.K. Aerial is well insulated and ground O.K.?

Q. (2): I am using an .0005 variable condenser in the secondary. If I put a .001 in my primary, do you think I could get the amateur music on 400 metres. I am 30 miles direct from Sydney?

A. (1): Fading signals have been the subject of very careful investigation, and no satisfactory explanation has yet been given. Your set might be working very well and still you get fading.

A. (2): Thirty miles is a long way to receive the music being sent out here on a crystal, although it has been heard 50 miles. You will want to tune very carefully. We would be glad to learn if you succeed in picking up the music. You should get Amalgamated Wireless Station on Tuesday nights, as they use a good deal more power than the experimental transmitters.

“R.G.G.,” Perth, asks:

Q. (1): Will you please tell me the range of the following set, double slide tuning coil 6 x 2½ inches, 26 gauge wire galena crystal, 1000 ohm receiver, 23 plate variable condenser, aerial 80 feet, 16 gauge, 3 wires 35 feet high?

Q. (2): What other instruments will I need besides the above to receive wireless concerts, providing I have 4000 ohm French receivers (sent out half a mile away)?

A. (1): This set when properly constructed should have a range of 100 miles at least.

A. (2): You should have sufficient gear for the purpose.

“D. McE.,” City, asks:

Q.: Where can I obtain a license for a crystal set?

A.: Apply to the Chief Manager, Telegraphs and Wireless, G.P.O., Melbourne.

“C.B.,” Double Bay, asks:

Q. (1): In a loose coupler set, which would allow the sharpest tuning—2 multi-point switches, with 8 taps each, or a double slide tuner (switches in the primary coil)?

Q. (2): Do you think I could pick up N. Z. with a 2000 meter L.C. crystal set, 2000 ohm phones, a 100 feet aerial, also amateur music from Double Bay?

A. (1): Providing the sliders are good ones and making the proper contact. This will give greater selectivity. If using switches, use a condenser.

A. (2): New Zealand is sometimes heard on a crystal receiver. Yes, you should hear amateur music.

“G.R.,” Milson's Point.

Will you please write us, giving your full address, and we will answer your question, giving diagrams, by letter.

**FOR SALE.**

Complete Loose Coupler (2000 metres) Crystal Receiving Set, with Phones, £2/10/-. Apply H. Hartman, 150 Birrell Street, Waverley.

Published by W. J. MacLardy, of 46 Murdoch St., Cremorne, for the Proprietors, at the offices of Publicity Press Ltd., 33/37 Regent St., Sydney.



June 1, 1923.

WIRELESS WEEKLY

## Wireless Experimenters' Requirements

Apparatus and Parts with a Guarantee of 100% Efficiency

**DOUBLE SLIDE TUNERS**, £2; complete with phone condenser detector panel.

**LOOSE COUPLERS**, £3; with detector panel, £3/15/-.

**LOOSE COUPLER PARTS**: Baseboard, 1/6; complete set of ends, 2/3; tubes, 6d. each; slider, 3/6; secondary sliding rods, 1/8 pair; primary wire, 2/-; secondary wire, 1/6; 8 studs and stops, 2/-; secondary switch, 2/9; Crystal detector, 4/6; all loose coupler parts nickel plated.

**VALVE RECEIVING SETS**, equal to any on the world's market, from £16; complete with high and low tension Bat aerial wire, insulators, Phones, etc., with Vernier adjustments for Telephony, £1 extra. **SWITCHES**: 2/9, 3/-, and 4/- each.

**CRYSTAL PANEL MOUNTED SETS**, £7, complete with phones, aerial wire, etc.

**VALVES**: Expense "B," 35/-; Radiotrons, 200, 37/6; 201, £2; 202, £2/10/-; Myers' Detectors and Amplifiers, 35/-; Marconi "R," 35/-; V-24, 37/6; Mullard Ora, 27/6; D.E.R., 50/-.

**PHONES**: Brown's single, 25/-; Murdock's, 30/-; Bestone, 32/6; Trim's, 39/6; Western Electric, 40/0; 42/-, 8000, 45/-; Baldwin's, £4/18/6; Brandes' Superior, £2; Brown's Loud Speakers, £5/5/-; Amphiphones, 12/6 each; Magnavox, £14/10/-.

**CRYSTALS**: Galena tested and guaranteed, 2/-; magnetite iron pyrites silicon, 1/6 each.

**"COLMO" CONDENSER**: Ready to assemble, .0001, 7/6; .0002, 8/3; .0003, 10/-; .0006, 12/3; .0008 15/6; .001, 18/6; assembled and adjusted, .0001, 10/- to .001, 25/-; with Vernier control, 10/- extra on assembled price. **TERMINALS**: From 5d. each; studs, 2/- and 2/3 per dozen.

**ERONITE TUBE**: 3 in., 34 in., and 4 in., diam., 12/- per ft.; Rotors, 5/6 each.

**TRIPLE HONEYCOMB COIL**: Mountings, 18/6; Remler, £1/2/-; Plugs, 4/6.

**INTERVALVE TRANSFORMERS**: Jefferson, £2; Radio Frequency, 10/- each.

**REMLER APPARATUS**: Potentiometers, 8/6; Rheostats, 8/6; Dial Rheostats, 12/6; Knob and Dial, 6/6; Rotary Switches, 3/6 and 4/6; Q.S.A. Tapped H/C Coils, 850 turns, £2/5/-.

## The Colville-Moore Wireless Supplies

10 ROWE STREET, SYDNEY

WE SEND GOODS (PER VALUE PAYABLE POST).



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

## QUALITY RADIO

Winter Seasons are the best for Radio Reception.  
Secure your Set before the season arrives.

WE STOCK COMPLETE SETS OR PARTS TO  
BUILD YOUR OWN.

B.T.H. English Detecting, 35/-; Amplifying, 35/-;  
and Transmitting Valves, 40/-; Head Sets 2000 to  
8000 ohms; Crystal Sets complete with 4000 ohms;  
Head Set, £5.

SEND FOR PRICE LIST TO

**W. HARRY WILES,**

Radio Department,

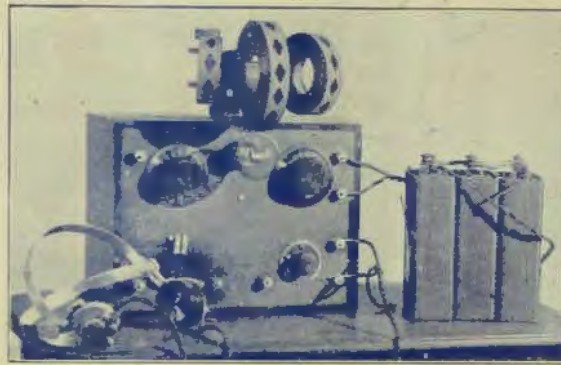
**60-62 GOULBURN STREET,**

One door from Pitt Street.

**SYDNEY.**



## 3 Coil Valve Set Complete



with "A" & "B" Batteries, Phones, Etc., Ready to "Listen-in" on.

### THAT A.C. HUM

Amateur Transmitters—We have fixed Condensers from 1 mf. to 20 mf's, prices from 2/6. Smoothing-out Chokes and all requirements. When designing your Transmitter consult us.

We are arranging Wireless Telephone Demonstrations to show what our sets will do.

You can instal a complete Wireless Receiving Set in your home for £14/14/0.

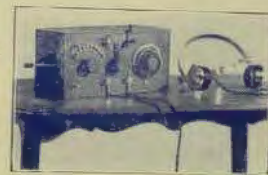
Consult us for advice and all particulars in Wireless Matters.

## Radio Company

18 Elizabeth Street

(4 doors from Hunter Street)

B 5586



Crystal Set Complete with Phones Ready to "Listen-in" on.