

WIRELESS WEEKLY

THE HUNDRED PER CENT AUSTRALIAN RADIO JOURNAL

Vol. 3

No. 21



Feb.
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1924

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SPECIAL FEATURE
THIS WEEK

HOW TO KEEP BELOW TEN WATTS
IRISH BROADCASTING

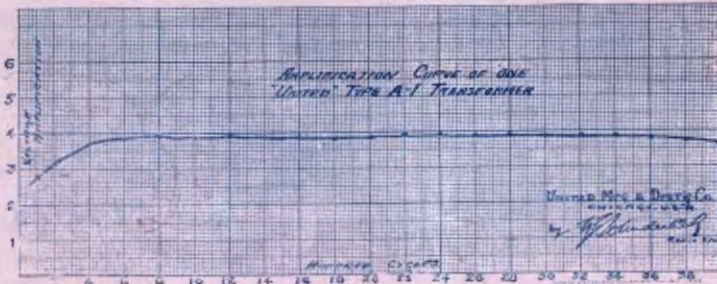
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Transformers

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Type A-1 Ratio 5 to 1

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Type A-2 Ratio 3½ to 1



Let Us Once and for All Times Settle This Question of Audio Amplification

Transformers, in order to give perfect audio amplification must have a characteristic curve as near to a straight line as possible.

United Audio Transformers have just such a curve as can be seen from the above chart.

A perfect audio transformer necessitates the best of core and winding design and construction.

In the United the best of core iron is used, a proper air gap is another reason for their perfect performance, and the winding construction and impedance further combine to make it the absolute best.

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Try a United Radio Frequency Transformer. Now on the market

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United Distributing Co. Limited
Manufacturers of Radiovox Sets (wholesale only)

Each Set Sealed for both Farmers and Broadcasters Ltd.

28 CLARENCE ST., SYDNEY

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V.M.N. V.H.G.



OFFICIAL ORGAN OF THE AUSTRALASIAN RADIO RELAY LEAGUE.

Vol. 3.

February 29, 1924.

No. 21

The Need for Country Radio Clubs

In practically every country town there are numbers of radio experimenters working quietly and enthusiastically to further their knowledge of wireless.

The great pity is that these young men do not band themselves together in clubs in order that they may benefit by each other's knowledge and experience.

Unity is as essential amongst radio experimenters as it is in any other direction. It will not only help them in

their work, but it will enable them to voice a united protest should their interests ever be threatened.

Clubs are easy to form and conduct, provided the proper spirit of "working for the advancement of wireless" is kept well in the foreground.

Experimenters have done much valuable radio work, and are destined to do much more. This paper will gladly tender advice to any country enthusiasts desirous of forming a club.

Watch for our New Cover

Roster for Week ending 5th March, 1924

	7.30 to 8.0	8.0 to 8.30	8.30 to 9.0	9 to 9.30	9.30 to 10
Thur, Feb. 28	2 RA 2 GR	2 IJ 2 JM	2 AR ZG 2 AR	2 UW 2 ZN	2 YI 2 ZZ
Friday, 29	2 IJ 2 GR	"	"	" "	" "
Saturday, 1	2 RA 2 GR	2 IJ	"	" "	" "
Sunday, .. 2	2 RA 2 GR	"	"	" "	" "
Mon., 3	2 RA 2 GR	2 IJ	"	" "	" "
Tues., 4	2 IJ	"	"	" "	" "
Wednes., ... 5	2 RA 2 GR	2 IJ	2 VX	2 ZN 2 UW	" "

2 DS works with 2 CM as 2 CDM Testing on Trans-Pacific Test Set

Care of Radio Storage Batteries.

It is interesting to note that most descriptions of radio receiver hook-ups merely indicate the position of the batteries and the way the connections are made. Very little that is being written on this subject gives any authentic information whatever on the care of the batteries themselves. Information on this subject is most important if the operator expects to get the maximum service and efficiency from storage batteries used in the circuit. The function of these units is as important as any other part of the receiving equipment and they deserve as great, if not greater, care for satisfactory and economic operation of the set.

The most important single item is that of discharge. The state of charge of the battery should be watched even though it continues to heat the filaments of the vacuum tubes seemingly satisfactorily.

A syringe hydrometer can be used to determine the state of charge very quickly and a gravity-reading of 1.100 or below should be considered as showing total discharge. Greater exhaustion of a battery may result in such hardening of the plates that it will be impossible to recharge it.

The second principle of battery care is that of insuring the proper level of solution at all times. The electrolyte should cover the tops of the plates and insulators to the height of $\frac{3}{8}$ in. This is to insure the proper action over the entire plate surface and to prevent the uneven hardening of those portions which may be returned from the service station after recharging with the proper amount of water in it, but if it has been recharged by the operator himself, distilled water only may be added to bring the solution to the required level.

Third, extreme care should be exercised to guard against the introduction of small particles into the battery cells while the vent plugs are out during testing or filling. Especially is this true of such substances as metals which are conductors of electricity, or other materials that are soluble in the battery solution. These often cause internal short circuits or other internal action which render the battery inoperative and may result in sufficient damage to necessitate expensive repairs.

Fourth, terminal connections should be made secure by using either stiff spring clamps or the usual terminal connections that are common on auto-

mobile batteries. If such connections are not available heavy copper wires can be soldered to each of the posts to insure good contacts. Terminals and connections ought to be coated with vaseline to prevent oxidising action at those places, and thus prevent the forming of considerable amount of green crystalline lead and copper oxides around the posts of the battery.

Acid or other electrolyte solution should never be added to a lead plate storage battery except under very special circumstances. When the battery is fully charged, the positive and negative plates are composed of sponge lead and lead oxide respectively and the acid of the electrolyte is all in the solution. With discharging, the lead compounds change gradually to sulphate and the acid in the solution is absorbed in this process. Upon charging, the reverse action takes place and the acid is driven from the plates to the solution. The addition of any more acid or other electrolyte alters the exact proportions that are already properly adjusted. When testing the solution with a syringe hydrometer, the electrolyte withdrawn for a reading must be returned to the cell from which it was taken. If this is not done, the result will be the same as adding more acid to one and removing some from the other, both of which are undesirable practices. Mistakes of this sort can be avoided by leaving the vent plugs in place except on the cell actually being tested. The plug on this cell should be replaced before the next one is removed. If this is done, there will be no accidental exchange of solution from one cell to another.

When all cells are in good order, the specific gravity of the electrolyte will test about the same (within 20 points) in each of them. Gravity at 1.235 to 1.250 indicates a fully discharged battery, which should not be used without recharging. If, after having a battery fully charged, it soon runs down again there is undoubtedly something wrong with the wiring system.

When the gravity is markedly lower in one cell than the other, especially after successive readings show the difficulties to be increasing, it is probable that the low cell is not in good order. If there is no leak in the jar, and if the gravity has dropped 50 to 75 points below that of the other cells, a partial short circuit or broken in-

Marrickville and District Radio Club.

The usual meeting of the above club was held in the School of Arts, Illawarra Rd., Marrickville, on Monday, 18th inst., President W. L. Hamilton occupying the chair.

That well known experimenter, Mr. F. C. Swinbourne, occupied the evening with a lecture entitled "How the various measuring formulae are arrived at." The various formulae relating to inductance and capacity were explained clearly. Exactly how and where to use them was dealt with at length. Mr. Swinbourne is at his best when dealing with this all important subject. He deplored the fact that the average experimenter is not as well acquainted with these measuring formulae as he should be, thereby placing him at a considerable disadvantage. The lecturer advised all present that he would be pleased to talk to them again on any subject they would care to hear discussed. The President in calling for a hearty vote of thanks to Mr. Swinbourne, thanked him for his generous offer of another visit which the club would certainly appreciate, and he hoped it would be in the very near future.

A moonlight harbour excursion is being held on the 5th March, and discussion related thereto was proceeded with.

Mr. Vaughan stated that he had been requested by the School of Arts' authorities to ask the club to arrange a demonstration of radio music for a function which is being held on the 3rd March. This matter is in the hands of Mr. W. H. B. Weston.

A meeting of the Technical Committee is being called for Thursday, 6th March. This will be held at the President's home where a cup of coffee is available after the business has been discussed. Now then, gentlemen of the Technical Committee, roll up!

An invitation is extended to all local experimental license holders to communicate with Secretary, A. W. Hemming, of 23 Central Av., Marrickville, who will provide particulars of membership. A few vacancies are available.

sulation within the cell is indicated. Either of these may cause serious injury to the battery and should receive the prompt attention of a good battery repair man.

"Wireless Weekly."**Mr. Basil Cooke takes over 2CM****To All Readers.****An Important Announcement.****Our Intentions for the Future.**

During the past two or three weeks arrangements have been concluded as a result of which *Wireless Weekly* has been placed under entirely new management. Mr. A. W. Watt, who has been connected with wireless for many years, has been appointed *Managing Editor*.

Mr. Watt is a gentleman of the highest integrity and ability, and has had a great deal of actual technical experience in all branches of wireless work. These years of experience should prove invaluable to readers of this paper.

Wireless Weekly, under Mr. Watt's guidance will be remodelled and reorganised and will become the weekly handbook of the wireless enthusiast from either the novice or the hardened experimenter to the broadcast listener.

While *Wireless Weekly* is opposed to the introduction of sealed receivers because it believes that movement to be against the best interests of wireless, it will endeavour to maintain a dignified and impartial policy, and while fearlessly discussing any point of interest which may arise in connection with the wireless movements will not, under any circumstances whatever, become in any way biased or personal.

Its columns from week to week will contain technical articles and also popular discussions of items of interest.

The "new" *Wireless Weekly* looks for the support of all its readers. It invites criticisms and welcomes suggestions. It wants readers to realise that it is quite a large family affair, that it will take up any matter of public interest in connection with the wireless movement.

The Editor and proprietors feel sure that with such high ideals and with such worthy objectives the paper cannot fail to achieve success.

The Editor, *Wireless Weekly*

Sir,—I have just received the following letter from Mr. J. Nangle, Director of Technical Education — this shows the importance that is being attached to the forthcoming experiments of Mr. Maclurcan.

As you know Mr. Maclurcan has fathered wireless telephone in this country and the present success attending amateur transmissions is very largely due to the excellent experiments conducted by 2CM.

I feel sure we must not only thank Mr. Nangle, but congratulate him on his desire to be of assistance to this research work—I trust all transmitters will profit by Mr. Nangle's example and give these experiments a fair chance.

Yours faithfully,

F. BASIL COOKE, F.R.A.S.

David Jones Ltd., Sydney.

February 25th, 1924.

(Copy)

SYDNEY TECHNICAL COLLEGE

19th February, 1924.

Basil Cooke, Esq., F.R.A.S.,

Radio Department,

David Jones and Co., Ltd.,
George St., Sydney.

Dear Mr. Cooke,

I have been informed that you are to be in charge of this end during the interesting and important experiments to be carried out by Mr. Maclurcan during his voyage on the "Tahiti" from here to the United States and back again.

You know, of course, that I have been granted the very great privilege by the Controller of Wireless to carry on experiments in wireless time signalling, and that my signals are issued on Saturday and Sunday evenings commencing at 6.55 p.m. and ending at 7 p.m. I am using spark transmission, and though as finely tuned as this kind of transmission can be, I fear that there may be some possibility of interference with your reception of Mr. Maclurcan's signals. I am not sure that I am correct, but I believe that this particular time of the evening may be specially suitable for

Continued on page 4, col. 3

A Word from the Editor.**The New Wireless Weekly**

As you have already learned from an announcement appearing in another portion of this issue the control of *Wireless Weekly* has been transferred and I have been appointed *Managing Editor* of this publication.

In assuming command of *Wireless Weekly*, a paper which I am sure finds a warm spot in the hearts of all experimenters and broadcast listeners, I intend to adopt as my motto—"Service to the Movement."

No matter which is of interest to the wireless world will be considered too small for me to take a personal interest in, and through the medium of *Wireless Weekly* I shall endeavour to bind the whole of the wireless experimenters into one very large and happy family.

I want the whole of the wireless enthusiasts not only of New South Wales but also of Australia to realise that my paper is THEIR paper.

In taking over my duties I must express my appreciation at the offers of help I have received from all sections of the movement. Amateurs and commercial men right throughout the city have assured me of their hearty co-operation and have advised me that they will do all in their power to help me make the journal a big success.

I feel quite sure that with the policy I intend to map out and with the assistance I shall receive, *Wireless Weekly* will become a real paper.

Yours faithfully,

A. W. WATT

THE MOORE FUND.

Appeal to Clubs.

The results to date for this very worthy appeal have been, frankly speaking disappointing. There are over three thousand licensed experimenters in the State of N.S.W. alone. If everyone of these experimenters sent along only a few pence, the result would be the handing over of an amount which would be the finest expression of sympathy the experimenters could possibly give.

We are gathered together as a band of brothers, our main objective being for the common good. The late Mr. Moore was a keen experimenter, and he was ready at all times to offer advice and assistance to any other experimenter. It is our duty now to see that his widow and the two little children are provided with sufficient funds to tide them over.

It is more than probable that there are many experimenters who may not be able to subscribe more than a couple of shillings. We therefore make a special appeal to club secretaries to bring this urgent matter before members at the next meeting, and to make a collection on the spot. Even a few pence from each member will result in something worth while.

Send along the contributions to the "Wireless Weekly," 33 Regent Street, Redfern, or to Mr. Phil. Renshaw, Box 3120 G.P.O., Sydney.

The funds will be handled by a Board of Trustees, consisting of Messrs. F. Basil Cooke, Phil. Renshaw and J. W. Robinson. These gentlemen will see that the money is properly disbursed.

A considerable portion of the wireless apparatus belonging to the late Mr. Moore is on sale at the shop of Miss Wallace, Royal Arcade, Sydney. Call in and see whether there isn't something worth having. Every item purchased means a little extra to the fund.

The owner of the late Mr. Moore's residence has requested the removal of the aerials, in order to make way for new tenants. Will some one make an immediate offer for the gear as it stands?

The mast is of wood, in two sections, each 40ft. high. The top section is so constructed that it may be lowered by sliding down the lower section. The aerial is of the umbrella type, comprising four squirrel cages, each about 80ft. long.

The whole of the outfit would be a valuable and permanent adjunct to any experimental station.

Contributions to date:

Proprietors Wireless Weekly	£5	0	0
United Distributing	10	10	0
Mr. Quaife	0	10	0
Wireless Weekly Staff	1	3	6
P. Renshaw	3	3	0
Mr. Jones	0	10	6
G. Taylor	1	1	0
J. W. Robinson	1	1	0
F. Basil Cooke	1	1	0
O. Sandel	1	1	0
Mr. Allsop	0	10	6
Mr. Saunders	0	10	6
Robert H. Doyle	1	1	0
Miss Day	0	10	6
A. F. Price	0	10	6
R. C. Marsden	1	1	0
A. Dare	0	10	6
M. McIntosh	0	10	6
Colville Moore	1	1	0
— Herker	0	5	0
— Sanders	0	1	0
Concord Radio Club	0	10	6
V. J. M. Darby	0	12	6
Wireless Institute	5	5	0
J. Usher	0	5	0
D. T. Hinchin	5	0	0
R. W. Faulkes	0	2	6
C. A. Taylor	1	1	0
A. Dixon	1	1	0
J. Lendlaw	1	1	0
C. Storm	0	15	0
H. Carter	0	5	0
A. Larkin	1	0	0
E. Mason	0	5	0
N. Ambrose	0	3	0
J. G. Prichard	1	0	0
Keith Davis	0	5	0
C. Leaver	0	5	0
R. Seach	0	2	6
Campsie and District Radio Club	0	15	0
A. E. Henry	0	5	0
Charles Tripp	0	5	0

Wireless Branch (P.M.G. Department, Melbourne)	1	8	0
Illawarra Radio Club	0	10	0
T. E. Dickenson	0	5	0
Total	53	19	0

Mr. BASIL COOKE

Continued from page 3

Mr. Maclurcan's tests, and I would be very sorry indeed if my spark transmission should in any way interfere with your work. I am convinced that the experiments which Mr. Maclurcan projects are very important, and that if successfully carried out some very useful results will occur. Will you please let me know as to whether there is any likelihood of interference. If there is any chance of this being the case, I shall be glad to close my station during the time that experiments are being carried out. Naturally, I hope there will be no need to close the station, but I beg of you to believe that I will do it very readily if you so desire.

With kind regards,

I am, yours sincerely,

(Signed) JAMES NANGLE,

Superintendent of Technical Education

Mr. F. Basil Cooke, F.R.A.S., who is Director of Wireless at David Jones Ltd., has been chosen to work Mr. Chas. Maclurcan's station at Strathfield during the American experimental trip.

It is due to the broadminded policy of David Jones Ltd. who have made Mr. Cooke available for this work. All those wishing to get in touch with Mr. Maclurcan should get in touch with Mr. Cooke, who will be able to relay any messages to Mr. Maclurcan en route.

Mr. Cooke and Mr. Maclurcan have always worked together, and in the early days of telephony the Strathfield Observatory tests began a new epoch in Australian wireless.

Mr. Gowe, another keen wireless enthusiast, will be co-operating with Mr. Cooke at 2CM.

Wireless Weekly wishes the greatest success to these keen scientists and hopes their endeavours will be amply rewarded.

HOW TO RECEIVE.

By "Old Timer."

Every message that is transmitted has got to be received. That's definite. We can't get away from that. And the best sender that ever punched lightning in the shape of dots and dashes along a conductor is wasted if the fellow at the other end can't get it down. So that we get to the point where we find that receiving is every bit as, if not more, important than sending. To a certain extent more important, because a good receiver; I say a "good" receiver is the chap that puts down not what the sender does push out, but what he should have sent. A big difference. Some senders get careless, their mind wanders; their thoughts stray from their job; they do all sorts of things senders should not do. Does that disturb the good receiver? No, sir, Not even one little bit. His thoughts are on the job at hand. He has the whole connected story in his mind, and with a benevolent smile calmly goes on writing away, placidly glossing over the obvious errors of the sender, always disdaining to break. Because, that receiver is in the ranks where all of us should try to get, that is, away up among the "big-guns" who are looked upon as marvels, but who really are there solely because of persistency, perspiration and proper teaching.

Alright, you say, "How can I be a good receiver?" Very well, then Gather round while I spill some of the oil out of the "torch of learning."

To receive, you've got to concentrate. You've got to watch your writing. You've got to use your "savee," and you've got to practise. Ever so many say, "I get up to 10 words a minute and I stop there. That's nothing. They stop at all different speeds for varying periods, then suddenly it seems to come to them. At least that's what they say. But what I say is, that the fellow who concentrates and practises properly will stop nowhere. He will go right through and leave the casual man far behind. Perhaps the greatest reason why they stop for a time at certain speeds is because of this. They get up to 10 words per minute. They know that because they're put the "clock" on themselves. They find they can get every word of it. Yes, every single word, and they think, "ain't life just fine?" And just because they

get 10 words a minute perfectly they read off the joker who only does 10. Now that's useless. Get this good and hard. If you can read 10 words and persist in reading at that speed, you'll never tack another word a minute on to your speed. When you can master 10 words a minute, get busy on a man who is doing 15. I know you won't get all of it for a start; maybe not half of it. But, you stick to it and just you see how soon you'll be doing 15. Then drop that "bird," and get hold of a twenty-a-minuter. You'll beat him just as easy. But it takes practise, and persistent practise at that.

Now "listen-in" to this gem. Don't write on top of the sender. Keep a word or two behind him. Sure, there's a reason for it. Here it is. Supposing one is sending at 20 words a minute. The sender spaces between every word (or he should). Now supposing he didn't space at all, just made one long word of it; in one minute he would send about thirty words a minute's worth of dots and dashes. But because he has to space he only actually gets out 20 a minute. Don't you see that if you write on top of him you actually have to write at a rate of 30 words a minute to get down an operating speed of 20 a minute. Just you keep behind him; you will be writing steadily while he is spacing; you will be reading by words and not by letters, making your work three times as easy, and you will not make any of the errors the sender does, because his errors will be apparent, and corrected by the time you will have started to write that particular word.

Take care of your writing. Your copy has to be read. So turn out stuff that will be a credit to you. Write big. That makes for a flowing style of writing, because you will never be a crack receiver if you don't develop a flowing and of course legible style of writing.

Be careful of your punctuation. James Smith, being a proper name demands capital letters. Some don't seem to think so. After a full-stop you should once more kick off with a capital letter. Again some consider that such is unnecessary. But it is necessary, and undeniably is one of those things that always stamps a man as being

either efficient or a "dud." So look out for your punctuation, and lay out your work in such a manner that it will stamp you as being efficient.

Don't guess. It's a sure sign of not only an inefficient man, but the chap who won't make good because he is not taking the trouble to concentrate. For a start leave plain English alone. I know it's nicer to read. Our "mother tongue" sounds good to us when sent at a speed we can all get. But then again, no good medicine was ever nice to take, so get off the plain English and tackle cypher. If you can't think up a cypher, get your friend to send your letterpress backwards. It's just as good and it will surely do the desired thing, that is; stop you from guessing. By continually reading that sort of stuff you'll soon read "any old thing" with dots and dashes in it. But always read off the chap who is sending a few words a minute faster than you can actually read.

Don't get hustled. If you miss a word during practice, stop him. You missed that word because it sounded difficult. Alright, if you allow him to go on you'll bump same difficulty next time. So stop the sender, and keep breaking until you have got it down right. Remove those difficult combinations from your path by sticking to it, and, they will soon cease to trouble you. Always keeping in mind the fact of reading behind the sender, because by doing that you will always be collected, and able to put forth your best concentrative efforts.

So now what do we have to do to be good receivers? That's right. You've got it. We've got to concentrate. We've got to watch our writing. We've got to receive off a sender who sends a little faster than we can put it down. We've got to refrain from guessing. We must not get hustled, and we've got to practise persistently.

QUERIES AND ANSWERS.

G.H.H. (Northcote, Vic.): All neutrodyne transformers are wound in the same direction. Ordinary telephone plugs of the two circuit type are O.K. "Neutralising the Neutrodyne," an article which appeared in last week's issue, will be helpful to you.

IRISH BROADCASTING.

Courtesy of "Irish Radio Journal."

The following is the text of a White Paper placed before the Dail by the P.M.G.:-

The first question which the Post Office had to consider in regard to wireless broadcasting was whether it should be worked as a Post Office monopoly, and after a careful consideration of the matter I came to the conclusion that the business of arranging concerts and general entertainment programmes was not one which a State Department ought to undertake.

In America, and elsewhere, where broadcasting has been conducted as a private enterprise, a multiplicity of companies has been found to lead to chaos and confusion and to an inefficient service. All experience has proved that there must be unified control in broadcasting if the public are to get an efficient service. The conclusion came to, therefore, was that an Irish Broadcasting Company should be established, the main capital of which should be provided by the chief firms interested in the industry, and with access to membership of the company by the smaller manufacturers and traders on taking a share in the company. This gives unified control, while at the same time ruling out no manufacturer or dealer who is interested in the industry.

The next problem was the problem of revenue. In Great Britain the Broadcasting Company gets its revenue from two sources: (a) it receives a proportion of the licence fees; (b) it receives a fee on each piece of apparatus sold. But in actual practice both (a) and (b) lent themselves to a good deal of evasion, and while 170,000 licences have been issued in Great Britain, more than 200,000 people had themselves put apparatus together and were receiving the benefit of the Broadcasting Company's outlay, while making no contribution thereto, until the Private Contributor's licence was recently introduced there. On the other hand, the trader, who is supposed to pay a contribution on each piece of apparatus sold, very often does not, and the Company is thus defrauded of its legitimate revenue.

In order to meet this situation here, it was thought advisable in the first place to licence sets constructed by a private individual, which had not been

done in Great Britain, and also to issue licences for other classes of user as hereinafter specified. And it was further deemed advisable that all apparatus should be imported through a Clearing House to be set up by the Irish Broadcasting Company, which should collect at the Clearing House the amount due to it on each apparatus as a contribution to broadcasting expenses.

On this basis negotiations were opened up with the various firms interested, and after many conferences the following constituent firms have agreed to join together in a scheme to work a system of broadcasting in the Irish Free State under licence from the Post Office:-

- (1) The Cork Radio Company, 50 South Mall, Cork.
- (2) The Irish International Trading Corporation Ltd., 4 Lapp's Quay, Cork.
- (3) Irish Developments, Ltd., 3 Molesworth Street, Dublin.
- (4) Dixon and Hemenstall, Ltd., Suffolk Street, Dublin.
- (5) Phillip Sayers, Esq., 16 Saint Andrew Street, Dublin.

The main features of the proposed scheme are as follows:-

1. A Company called the Irish Broadcasting Company to be formed by the constituent Companies, with a guaranteed capital of not less than £30,000, 25 per cent. of which is to be reserved for taking up by other manufacturers, traders, and dealers, the maximum allotment to any such individual or firm not to exceed 20 shares. Membership of the Company to be open to any bona fide firm or person carrying on the business of manufacturing wireless apparatus or trading or dealing in such apparatus, in the Free State, on subscribing for one or more £5 shares in the Company, and on paying a deposit of £50. This deposit to be invested in Free State Savings Certificates in the name of the Company. The Certificates, with interest, to be transferred to the depositor on his ceasing to be a shareholder in the Company.

2. The Board of Directors of the Company to consist of seven members nominated by the constituent firms.

3. The Company to undertake to erect and operate during the continu-

ance of the licence a Broadcasting Station at Dublin, and other stations if found desirable. A suitable programme to be provided daily, except on Sundays, Good Friday and Christmas Day, to the reasonable satisfaction of the Postmaster-General.

4. A license to be issued to the Company for five years, and to be renewable thereafter at the pleasure of the Postmaster-General. Power to be reserved to terminate the licence at any time for failure to fulfil its conditions.

5. The importation of wireless sets or component parts of sets to be confined to the Company and its members. All wireless material, except Government material, to be consigned to the Clearing House of the Company at Dublin.

6. The Company to be at liberty to manufacture and sell wireless receiving apparatus.

7. The Postmaster-General to issue licences for wireless receiving sets to persons who comply with the conditions prescribed by him, and the Company to receive a share of the fees charged for licences in accordance with the following scale:-

Ordinary licence.—Fee, £1 a year; Company's share, 15/-.

Constructor's licence.—Fee, £1 a year; Company's share, 15/-.

Schools' and Institutions licence.—Fee, £1 a year; Company's share, 12/6.

Hotels, restaurants, public-houses', etc., licence.—Fee, £5 a year; Company's share, £4/10/-.

Occasional licences.—Fee, £1 each; Company's share, 12/6 each.

Manufacturers, traders, or dealers' licence.—Fee, £1 a year; Company's share, £1.

Amusement purveyors' licence.—Fee, £1 a week; Company's share, 90 per cent.

8. The hours of broadcasting to be from 11 a.m. till 12 noon, and from 5 p.m. till 11 p.m. No news items, save official news which the Government may desire, to be broadcasted before 7 p.m. The Company to obtain its supply of news from one of the recognised sources. The Company to be allowed to broadcast, for not more than 15 minutes daily, advertising matter relating (a) products or topics con-

cerning the Free State; (b) any foreign material to which the Postmaster-General has given his approval beforehand, and to pay to the Postmaster-General a royalty at the rate of 10 per cent. on any revenue derived from such advertising matter.

9. The Postmaster-General to have the right to send a representative to attend Directors' meetings or to inspect the processes of the Company when considered necessary.

10. The Company to pay a royalty of £50 a year in respect of each station operated by the Company.

It has been agreed by the promoters that the Memorandum of Association and the Articles of Association of the Irish Broadcasting Company shall be submitted for the approval of the Postmaster-General, and it will be provided in the licence issued to the Company that this Memorandum and Articles cannot be altered without the consent in writing of the Postmaster-General.

The form of agreement to be entered into between the Company and manufacturers, traders or dealers, who wish to become members, will also have to be approved by the Postmaster-General, and will form a schedule to

the licence. This agreement will include a schedule showing the amounts payable on imported apparatus as a contribution to the expenses of the Broadcasting Company. Nothing will be payable on material imported by the Government, or on material imported by bona fide experimenters under licence from the Postmaster-General.

The licence will make provision for transmission by the Broadcasting station on approved wave lengths designed to prevent interference with existing stations and to safeguard the telegraphic lines of the Post Office from damage or interference. The licence will also stipulate for the observance of the provisions of the Radio-telegraph Convention so far as they are applicable, and of any regulations made by the Postmaster-General for the conduct of wireless telegraph business. The Company will be required to transmit free from its station any communiques, weather reports or notices issued by the Department of the Government, with the approval of the Postmaster-General.

Under this scheme there is prospect of the early establishment of a broadcasting service in the Free State, for

which a wide and growing public demand is made. At the same time no monopoly will be created, as all manufacturers of wireless apparatus will be at liberty to share in the operations of the proposed Company.

It has been decided to erect the first and principal aerial station at Dublin, as besides being central for a large part of the country, that city and surrounding districts have a much larger population than any other centre in the Free State. Cheap sets are adequate for reception within short range so that with a station situated at Dublin broadcasting can be brought within the reach of the greatest possible number of people. Moreover, the success of the scheme will largely depend upon the character and diversity of the programmes provided, and Dublin undoubtedly offers greater facilities in this respect than any other town in the Free State.

The Post Office does not seek to make a profit out of the control of the service or the licensing of the receiving sets. The balance of the fees which it will retain after making the contribution to the Company, will, it is estimated, only cover the cost of ad-

Continued on page 9, col. 1

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How to Keep Below 10 Watts.

By C. D. Maclurcan

When an experimenter obtains a transmitting license and makes his first valve transmitting set, right here is where he may be likened to the man who gets married—he has surely started a bunch of trouble for himself.

Usually the first trouble is that although the set is a perfectly good one in all other respects—it won't work.

The second trouble is that it will work—but the ding-busted thing takes 80 watts—and—"mind you, Claud, I'm only using two 5 watt tubes."

The object of this article is to help him, if possible with trouble No. 2, so that he may not only keep below his licenced power of 10 watts, but push holes in the ether at 1000 miles.

It must be remembered that the so-called 5 watt transmitting valve will take anything up to 50 watts input power. As a matter of fact its normal input rating (350 volts 45 M/A) is 15 watts. How, then, to keep it below 10 watts.

The most important thing is, of course, the aerial system.

If your aerial and counterpoise is as full of losses as the ether is full of "How's my modulations," you cannot expect efficient working. All losses have to be overcome before the set radiates, and the greater these losses the more power required for the job.

It is not proposed to deal here with the aerial system, but we will presuppose that our budding Marconi has a "pretty good aerial of average badness."

Let us consider the circuit in Fig. 1. This circuit is probably the most popular one used by amateurs to-day, and is practically the same as that used by 2CDM on the Tahiti.

We will try and adjust the circuit to function most efficiently, not necessarily to max. radiation, but so that we get good radiation with the least possible input power.

It will be taken for granted that the transmitter is connected up correctly and will oscillate.

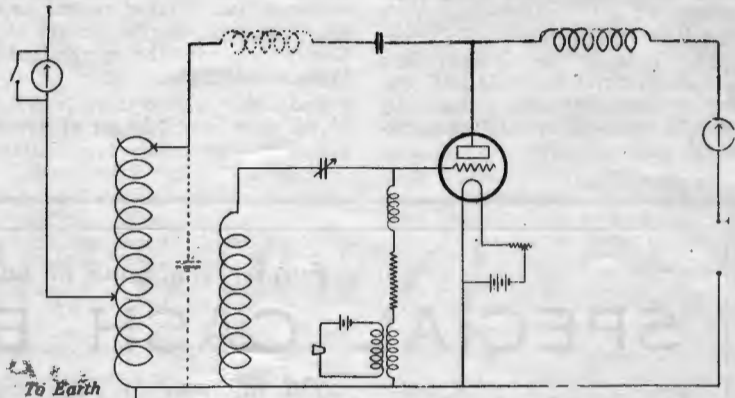
Suppose the radiation is .5 amps., as shown by meter M1, and that the current is 100 milli-amps., as shown by the meter M2, in the plate circuit. If the plate supply voltage is 300, then the power in use is 30 watts. This power is to be decreased to 10 watts, and no amateur would be satisfied

with less than 1 amp. radiation (not that this means anything).

Now, the parts of the circuit that demand attention for increasing the radiation and reducing the input power are L1 (R.F. choke in grid leak circuit), (L2 R.F. choke in plate circuit), RI (grid leak) and the plate clip X on the Helix.

In most amateur transmitters the worst offender is the plate helix clip X. It is often necessary to provide ten times the number of helix turns between the plate and earth clip as between the aerial and earth clip. At 2CM there are 16 turns in the plate and only three in the aerial.

To Aerial



As the plate clip is moved up it will be noticed that the radiation increases slightly with each turn, and the plate current decreases considerably. Continue to add turns until the radiation reaches a maximum value, or even further till there is a slight decrease, so long as the current in the plate circuit continues to drop. Better to sacrifice .1 amp. radiation if we can save two or three watts of power. At 2CM it was found that at 7 watts input the radiation was 1.7-amps. But to get 1.8 amps. took 9.6 watts.

It may be found that there are not sufficient turns of helix available. In this case there are three alternatives (1) to make another helix (who threw that brick); (2) add an inductance or variometer between the condenser C and the plate clip (20 turns of 1/18 D.C.C. on 3 in. tube with turn to turn adjustment); or (3) put a tiny mica

condenser across the helix from plate clip to earth, as shown by the dotted lines in Fig. 1. This condenser may consist of two pieces of foil about 1 inch thick x 1/2 inch, with good mica dielectric.

Having adjusted to maximum efficiency at this point, next turn the attention to the grid leak.

The makers of the 5 watt radiotron valve specify a grid leak valve of 10,000 ohms—"fer-git" it—50,000 or 100,000 will be better (especially if good modulation is wanted for telephony). As the resistance is increased, you may find, like the previous adjustment on the plate, that radia-

tion decreases slightly—but, O boy! watch the plate milli ammeter. Ask for a raise in salary.

2SM uses 200,000 ohms, and 2DCM 80,000 ohms.

Next give attention to the two radio frequency chokes L1 and L2. Honeycomb coil plugs are strongly recommended here, then you can borrow all the spare H.C. coils from your friends till you find the right ones. Try all sizes from 75 turns up to 500 turns, you can't tell which will give the best results (lowest plate current and max. radiation), because transmitting sets are like girls—"you never find two alike at any one time, and you never find one alike twice." (Tennyson or Mark Foy, or was it Phil. Renshaw, I forget which.)

At 2CM L1 was 250 turns, L2 75, but 2DCM. (bless its obstinate heart, or should I say "choke its oscillating

hook up"). L1 was 420, and L2 ditto.

Sorry, people, that I haven't time to finish this article. I've got to run across to America and back—won't be long—standbi a sec. and I'll finish it when I come back. Anyway, you've got something to work on in the meantime.

Thank mother for the loan of the —no—I won't say it.

Irish Broadcasting

Continued from page 7

ministration, accounting and inspection. The royalty to be paid by the Company is in recognition of the Postmaster-General's monopoly in respect of wireless communication and to meet the expense of administration and inspection. The Ministry of Finance and the Revenue Commissioners, who have been consulted, raise no objection to the proposals.

Book Review

"The Radio Telephone."

This is one of the most simply written and best illustrated radio books yet produced, and in its wonderful clarity of explanation is a revelation to those ordinarily used to the imposing technical details of the usual wireless books.

It is in itself a complete course on amateur wireless, and contains a full set of questions and answers, so that the reader may check up his own studies.

It holds the reader's interest right throughout its 93 pages, because the science of wireless has been put into such a simple form, and with an entire absence of technicalities that the contents are easily grasped by those who know nothing of wireless.

Crystal detectors and vacuum receivers right up to the modern "super" receivers, together with the parts necessary for constructing home-made apparatus are fully and satisfactorily dealt with. This book should be with everyone interested in wireless.

Two shillings, post free, from W. Harry Wiles, 60-62 Goulburn Street, Sydney.

New Zealand Broadcasting

Mr. C. E. Forrest, who has just returned from a trip up north, mainly in connection with the formation of the Wireless Company which is to practically control broadcasting operations throughout the Dominion, is well satisfied with the results of his work. Negotiations have been proceeding for some time past, and the business trip he has just finished has brought the proposals into something like concrete form. Everything has gone well, and the suggestion in connection with the formation of the new company are favourably reviewed by the Post and Telegraph Department, which has control of all matters connected with radio. It will only take a very short time to bring the company actually into being, and then it will be a question of negotiation with the department in regard to the all important matter of licenses for broadcasting and reception.

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NEWS IN BRIEF

On a recent evening, Mr. R. Bruce, of Dunedin, "picked up" the Sydney Broadcasters Ltd. The first item received was a song by Mrs. Wimmill, entitled, "The Prayer of Ivanhoe," followed by "Coming Thro' the Rye." Other songs were the "Last Rose of Summer" and "Davy Jones' Locker." A flute solo, "Barcarolle," by a Mr. Stanaway, was also heard distinctly. The broadcasting was concluded at 0.55 a.m., New Zealand time, and several evenings later Mr. Bruce "picked up" 2FC (Sydney), and heard songs, a flute solo, and a Scotch solo, the last-named being very clear.

Much has been heard among amateur circles recently of the new microphone produced by Mr. A. E. McIntosh, of Lane Cove, owner of station 2ZG. For some time past, thousands of listeners have been delighted with the perfect transmission of 2ZG, and the music of the Concertrola used by Mr. McIntosh was beautifully reproduced with his new microphone. Tests extending over a period of three weeks were conducted by 2ZG with the following first class results: 3BD (Vic.) Major Cox, using 2 valves, heard 2 ZG telephony 30 feet away from the phones.

BOOKS ON WIRELESS

Detector and Amplifier Units: How to Make. Price, 3/3, posted.

All About Aerials and Their Construction; with 12 Blue Prints. Price, 3/3 posted.

Short-Wave Regenerative Receiver; How to Make. Price, 3/3 posted.

Radio Formulae and Diagrams for Radio Students. Price, 3/3 posted.

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Good reports were also received from Sutherland, Northern Rivers, and from Mr. H. A. Rose, at Yanganbil, near Warren. The power used by 2ZG was only between 7½ and 8 watts. The new microphone is now being tried out commercially and, following upon tests made at the King's Hall, Sydney, experimenters may look for fresh developments in the near future. The technical details of Mr. McIntosh's microphone will appear shortly in Wireless Weekly, also details of station 2ZG.

In connection with the forthcoming 10 watt tests, Mr. C. P. Smith (ZZZ) Cremorne, is sending out every night a general call to all experimenters in other States. Transmission will be on 225 meters and at the following times: 8 p.m. and 9.30 p.m.

ZZZ will send the following message: Call CQ, A, ZZZ.

(1) Radio test message, No. 1: N. S.W. 10 Watt Club will hold Interstate Tests first week in March. Please log all stations heard and send logs to Editor, Wireless Weekly, 33 Regent St., Sydney—ar—pse QSL, K, ZZZ.

Rev. Richard Piper, now holidaying at Moss Vale, is on a visit from Lautoka, Fiji. He has a spark station at Lautoka, call letters LA. During his stay in N.S.W., Council has conferred upon him the privilege of Honorary Membership of this Division of the Institute. The Rev. Piper is anxious to test with members after his return to Lautoka. Please keep this in mind.

(In our sea-going days on V.H.B., we have on several occasions spoken direct to L.A.—Ed.)

Articles by Mr. L. Hamilton and Mr. Malcolm Perry, will appear in next week's issue.

Mr. E. B. Crocker (2BB) who has just returned from a holiday at Ka-toomba, expects to be on the air again within the next few days.

The Northern Suburbs Radio Society is arranging an exhibition of broadcasting and amateur sets and parts at Killara Hall on Thursday, February 28th.

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

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Mr. Hamilton Breaks In.

47 Premier Street,
Marrickville,
2/2/24.

To the Editor,

"Wireless Weekly,"

Dear Sir,—May I have space to reply to Mr. Malcolm Perry's article entitled, "Where the Amateur is Drifting," published in "Wireless Weekly" of the 22nd instant.

I am very much inclined to disagree with him. The amateur to-day does think, and certainly does achieve much better results than his confreres of 1912-'14, and, as he does, he certainly is progressing and not taking a retrogressive step as Mr. Perry's article is liable to suggest.

Mr. Perry states that every member of the Wireless Institute in the year 1913 was getting signals from Melbourne, Adelaide, New Zealand, Hobart, Brisbane, Townsville, Port Moresby and sometimes Perth, using a crystal detector, and yet quite a number of experimenters have to go for their lives to get these stations using a single regenerative valve." While I do not doubt for a moment that the early experimenter achieved such results on a crystal, I certainly take exception to the deprecating manner in which Mr. Perry castigates the modern experimenter.

I would point out to Mr. Perry the excellent results the modern amateur is achieving. It is quite a common occurrence to-day for a "single-valver" to pick up interstate and New Zealand amateurs who are using a very low power, a power nowhere within the regions of that used by a commercial station. It is almost as common for the same "single valver" to tune in his American confrere, also on a low power. Would you call such performances "drifting"?

Perhaps Mr. Perry will say that only a few obtain these results. This is certainly true, but I venture to say that before very long hundreds, yea, even thousands, will be doing likewise.

Now, coming to the transmitter. He to-day is conquering distance, and on a low power, too. Take the exploits of our Mr. Chas. Maclurcan. Hasn't he shown us and demonstrated to the world at large the value of transmission on low power? And isn't his projected trip on the Tahiti this month to assist in this direction? Surely this will satisfy Mr. Perry that conquering distance is necessary. Didn't Marconi

attempt to and succeed in conquering distance? And hasn't it proved of extreme value?

The trend of modern experimenters is in the right direction. The Branly coherer was a wonder in its day. The magnetic detector and the crystal superseded it, and now the valve supersedes both. Why? Because results decree that this must be. It is progress, Mr. Perry, and the amateur is not drifting, but is forging ahead.

Sincerely yours,

W. L. HAMILTON,
Marrickville and Dis. Radio Club.

And Mr. Perry Comes Back

280 Castlereagh Street,
Sydney,

22nd February, 1924.

The Editor,

"Wireless Weekly,"
Sydney.

Dear Sir,—I have much pleasure in replying to the letter from Mr. W. L. Hamilton, of Marrickville, in which he disagrees with several statements in my last article in your journal.

I emphasised the fact that my idea was to get the amateur to think for himself, and I am very glad to hear that Mr. Hamilton is one of the first to think for himself.

However, I want to put Mr. Hamilton right on several points. First of all, Mr. Hamilton endeavours to make comparisons between the experiments carried out in pre-war and after-war periods. Mr. Hamilton forces me to submit the argument that he, not being a pre-war experimenter, cannot naturally make any accurate comparisons.

Mr. Hamilton says that quite a number of present day experimenters are picking up interstate and New Zealand amateurs on a single valve, but this is no argument whatsoever, as the transmitting stations are using C.W. and not spark. I made comparisons on spark work. The same argument applies to American amateurs.

Mr. Hamilton states that the magnetic and the crystal detectors have been superseded, but it will interest him to know that the most popular detector for broadcasting in England at the present moment is the crystal. May I cause Mr. Hamilton's brain to oscillate a little by letting him know that operators in English commercial stations are using magnetic detectors for receiving traffic from America.

With regard to the transmitters, I

am going to deal exhaustively with the position in my next article, and would esteem it a favour from Mr. Hamilton if he would allow me to reply to them. Meanwhile, in order to get things moving amongst the transmitters, I want to suggest that all existing long distance records be scrapped with the exception of those where communication has been opened up and maintained at a rate of not less than 15 words per minute, for a period of not less than five minutes.

In closing, I would like to cause further oscillations by letting Mr. Hamilton know that it is the opinion of commercial men that so far as receiving from 600 metre spark stations is concerned, the valve has not increased the distances over which messages can be received except during day light.

Yours faithfully,

MALCOLM PERRY.

(We cannot agree with Mr. Perry's last statement, and would point to the fact that both R.M.S. Tahiti and Maunganui are regularly working traffic with KPH (San Francisco) every voyage at well over 5000 miles. This is done on a one valve receiver, and would certainly not be possible with crystal.—Ed.)

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RADIOCULOUS

The lid not yet having been clamped down tight on tales referring to those debilitating days of false stimulation, we feel free to pass along this account of a foggy minded man who entered the drug store about the time of closing. He wandered about the store, until the clerk, in a hurry to close the store and go home, said: "Come, hurry up! What do you want?"

"No rush; no rush 't all," said the customer, radiating good nature and strong aroma. "Don't know what I want. Want somep'en, don't know what it is. Forgot. Name over some of the things you got."

"Well," said the clerk, "we have mustard plasters and hair brushes and razor blades and soap and pills and—"

"Hol' on! Hol' on! Don't want none of those things. That ain't right. Shay, what's some of th' Great Lakes?"

"Oh, there's Lake Superior and Michigan, and Erie—"

"Erie! Thash th' feller! Who was th' feller said, 'Don't give up the ship?'"

"Perry."
"Thash it! Perry! Gimme five cents worth o' perrygoric."—Bruce, Business Building.

The inhabitants of a southern town built a bridge. It was a fine structure, and should be decorated, they thought, with a suitable inscription. The brightest minds of the town grappled with the problem, but nothing quite expressed the pride and satisfaction of the community.

The tablet that was finally put up read: "This bridge was made here."—"Harper's Magazine."

Mary's Beau (waiting for her to come down stairs): "Is Mary your oldest sister?"

Kid Brother: "Yep."

"And who comes after her?"

"You and two other guys."

—Lehigh Burr.

Tell your friends about
Our Big Competition

An antiquated looking individual was hawking fish. "Fine, fresh fish, fower a penny," roared he.

A woman came to the barrow. "Are they fresh?" she asked.

"They're fower a penny, mum," was the guarded reply.

"Yes," responded the other, "I heard you say so, but are they fresh?"

"Can't say for sartin, mum," came the sarcastic reply. "I applied for the birth and death certificate of every fish on the barrer, but at fower a penny it simply couldn't be done."—"Parson's Weekly" (London).

A want ad. for an office boy brought many applicants. One little fellow gave the young lady at the information desk a scribbled note for immediate delivery to the boss, which when opened read:—

"I'm the last kid in the line. Don't do anything until you see me."

He got the job. He used his head.

An American friend just over from the States dropped in to the "Passing Show" office with the latest joke on the American passion for standardisation. A man was being questioned by an employer on his suitability for a fairly important job as a mechanic.

"But," said the employer, "are you an all-round man—a thoroughly trained mechanic?"

"Oh, yes," the man assured him: "for six years I had experience at the Ford works."

"And what did you do there all that time?"

"Well," said the man, "I screwed on nut 467."—"The Passing Show" (London).

The cuff on the bottom of trousers came in this way. A Scotchman had been out in a rain and had turned up his trousers at the bottom. When he returned he found he had lost a sixpence. He looked everywhere for it, but in vain. That night, when retiring, the coin fell out of the fold. The next day he had all his trousers "cuffed," and the tailor discovering the reason, soon built up a big business.—"Christian Advocate."

A country school board was visiting a school, and the principal was putting his pupils through their paces.

"Who signed Magna Charta, Robert?" he asked, turning to one boy.

"Please sir, 'twasn't me," whimpered the youngster.

The teacher, in disgust, told him to take his seat; but an old tobacco-chewing countryman on the board was not satisfied, so, after a well-directed aim at the cuspidor, he said: "Call that there boy back. I don't like his manner. I believe he did do it."—E. S. Tillinghast, Hibbing, Minn., in "The Yellow Strand."

Baby was nodding.

"The sandman's coming around," softly sang the young mother.

Just at that point a vender in the alley yelled, "Fresh spinach."—"Judge."

The other night in my sedan
There was just her and me—her man.
I talked of rain, and shine, and old
Forgotten days, and pirates bold,
And ships, and sealing wax, and gold.
Then all at once she said, "I'm cold."
So I, though cool, took off my coat,
And wrapped my muffler 'round her throat.

And then I talked of golfer's stance,
The styles in clothes, the latest dance.
And how the mediums faked a trance
And I grew cold, but goah! her glance
Was colder yet. I ask of you
Just what it was I failed to do?

—"Chicago Phoenix."

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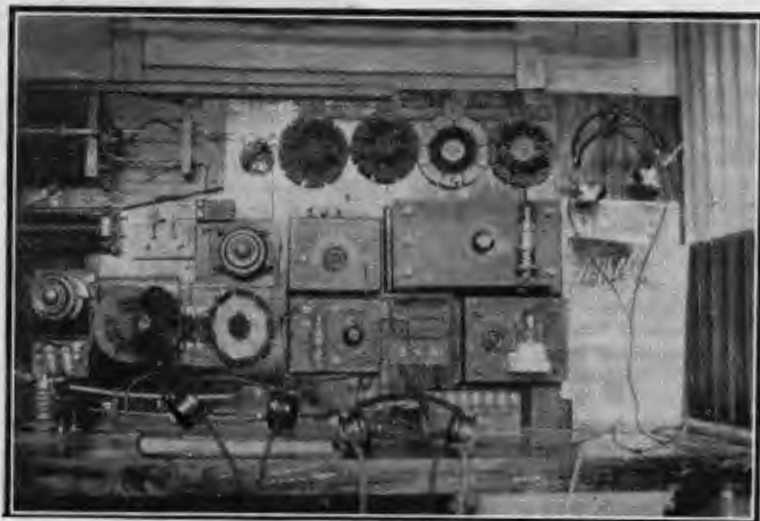
Hetrodyne and Buzzer
Wavemeters.

Clever Amateur Experimenters.

The accompanying photographs and descriptions refer to the very fine set of Milton and Cecil Henry, at Rhodes, and has been in operation for about three years. The apparatus is accommodated in a small shed which they built for the purpose. The aerial

employed is of the inverted L type, 80 feet long and 40 feet high, consisting of three wires spaced with spreaders, 8 feet in length. The masts are of wood and the lead in is 50 feet long. The earth consists of large copper and iron sheets buried in clayey

soil about 8 feet away from the set. The crystal set may be seen in the top left hand corner of the photograph, and consists of a loose coupler tuning to about 2000 metres, a double slide coil with a wave length of about 900 metres and a zincite and copper pyrites detector. Using this set (via) Awanui can be copied easily almost any night and we have also copied (Vin) Geraldton, (Vie) Esperance, and most other Australian stations. The valve set occupies the other space, and consists of 3 valves, but usually one is employed in conjunction with a 3 coil spider web tuner, which has proved to be very efficient on short waves. For the longer waves from 2000 to 25,000 metres they employ the tuner shown in the bottom left hand corner of the photo. and used with one valve. Most high powered stations of the world are brought in, including (Pkk) Bandoeng, (Jaa) Zwaki; (Npo) Cavite; (Npn) Guam; (Npg) San Francisco; (Kii) Kakuku, and others. The valve used for detecting is an Anaka and has been in constant use for the past 12 months. Two accumulators in use are a Gecko and Exide of 6 volts 80 amps. and 4 volts 60 amps respectively.



The Henry Set



Cecil Henry



Milton Henry

The (B) battery is the usual 42 volt block and is enclosed in a case with a multi point switch which can be varied in 3 volt steps. The two valves on the right hand side are a Mullard Ora and De Forest, which are used as audio frequency amplifiers. Three pairs of phones are included in the set comprising a pair of Western Electric, Brand's and Trimm's.

The set was almost entirely built by these two young experimenters, and we congratulate them upon their work, and the wonderful results they have achieved. A representative of this paper listened in on a recent Saturday evening to the programme rendered by the Mort's Dock Male Choir and broadcasted by Farmers. The music came through with remarkable clearness, and we spent quite an enjoyable time.

"Well, I showed up the teacher before the whole class again to-day!"

"Yeh? Wise us up!"

"She asked me for Lincoln Gettysboig address 'n' I had to tell her he never lived there. Oh! ya shoulda hear the class laugh then."—"Life."

Ten Watter's Club



The Henry Laboratory

The Ten Watters' Club meeting, held at 387 George Street, recently, elected their first office-bearers. Mr. J. S. Marks (2GR) was elected president and roster-keeper; Mr. Cutts, secretary and treasurer; committee, Messrs. R. C. Marsden (2JM), Nolan (2YI), Cotterell (2ZN), Vicary (2RA).

This club was formed with the idea of promoting harmony and smooth working amongst the Sydney amateur transmitters, and so far has met with great success. With few exceptions, all transmitters are working on proper wave length and keeping to proper schedule.

The club is open to all N.S.W. transmitters, and intending members should notify Mr. Cutts at the above address.

It was proposed that a test will be held during the first week in March, with all country listeners-in, to ascertain the efficiency of all the Sydney transmitters, and reports will be gratefully accepted from all listeners-in. The schedule of time will be published in a later edition of the "Wireless Weekly."

The tests with (2CDM) Mr. Mars-

den will interview Mr. Maclurcan to arrange times for tests with that station.

Notes.

2JM is on the air with great punch and splendid modulation, equal to any. 2YI has still got the beehives.

2ZN has penetrated New Zealand. 2UW is erecting his new station at Bellevue Hill, and will be very much heard very soon.

2GR at present is resting, but will be again transmitting as soon as the necessary alterations are made.

2ZG is testing out something good in microphones and other things.

2RN was very good Saturday evening, and is improving every week.

2VM has busted.

2DS is busy with 2CM, on 2CDM. Half their luck!

Membership List.

2GR, 2JM, 2YI, 2ZN, 2RA, 2DS, 2VM, 2IJ, 2UW, 2WU, 2DE, 2ZZ, 2ZG 2YG, 2CJ.

All intending members please write to Mr. Cutts, secretary, or Mr. Marks, president, at 387 George Street, Sydney. Subscription, 5/- per year. Open to country as well as Sydney members.

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The Leichhardt and District Radio Society

Members of the Leichhardt and District Radio Society held their 68th General Meeting at the Club-room, 176 Johnston Street, on Tuesday, February 19th, when several important matters were discussed. It was announced that, at the following meeting to be held on February 26th, the second lecture of the recently draughted syllabus would be delivered by Mr. F. Lett, who would deal with the important subject of "Tuning Elements."

On February 17th a party of members paid a visit to the station on board the P. and O. R.M.S. Mooltan, and spent a very pleasant afternoon.

The third lecture of the syllabus will be delivered on March 10th, when Mr. W. J. Zech will talk on "Crystal Detectors and their Action."

Inquiries are invited from experimenters who reside in the Leichhardt and surrounding districts with a view to enrolling them as members of the Society, and same should be addressed to Mr. W. J. Zech, 145 Booth St., Annandale.

Sydney Boys' High School Forms Radio Club

The Sydney Boys High School is to be congratulated upon the formation of a Radio Club, the minutes of the first meeting of which have just reached us.

Officers: President, Headmaster.

Vice-President: Mr. Willmott

Secretary, Mr. Patterson.

Treasurer, Mr. Pont.

Librarian, Mr. Taylor.

Committee, Messrs. Hirst and Pope.

It was decided that, until the Club becomes financial, use will be made of the members' own wireless material.

A temporary arrangement of one meeting a week (every Tuesday) will

be put into force and at an early date a Morse class will be commenced. In order to help along members with their wireless studies, a library has already been started.

At next week's meeting (26th) Messrs. Pont and Patterson will lecture and the fact that diagrams will be used shows that the club is starting along the right lines.

The committee is endeavouring to arrange lectures by prominent Radio men, and while several have already given their help, Wireless Weekly specially asks that others will use their best efforts to give this fine movement a lift along.

Wentworth Radio Club

The first annual general meeting of the Wentworth Radio Club was held in the rooms at Bellevue Rd., Double Bay on Wednesday evening, February 20th. The following was the result of the election of officers: President, J. Spencer Nolan; Vice-Presidents: J. Skinner, Leslie Holland, and R. C. Marsden; Secretary, Phil Nolan; Treasurer, Geo. Peters.

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Phone: City 3302.

Phone: City 10592.

The Committee personnel has not yet been decided upon. The Club meets every second Wednesday at Bellevue Road. The Wentworth Club is fortunate in the fact that the well-known transmitting and receiving station, 2YI is located in the club rooms.

Croydon Radio Club

The Croydon Radio Club met as usual on Saturday, February 16th, at "Rockleigh," Lang Street, Croydon, at 7.30 p.m.

Mr. C. W. Slade presided, and gave a very interesting lecture on reflex circuits. He described the Grimes 4-valve inverse duplex circuit, which he recently designed and built for the firm of W. Harry Wiles.

As far as it is known this is the first instrument of its kind to be manufactured in Australia. It covers wave lengths from 200 to 5000 metres.

Mr. Slade gave members a demonstration of this wonderful set, and using only a small two-foot loop, both Broadcasters (Sydney) Ltd., and Farmer's were heard with exceptional volume and clarity.

Many members of this club will no doubt try experiments with reflex circuits, and some valuable information may be discovered.

Mr. Slade received congratulations from the club members.

All interested in the club should communicate with the Hon. Secretary, G. Maxwell Cutts, "Carwell," High-bury Street, Croydon.

Wireless Institute of Australia

N.S.W. Division

The monthly meeting of the N.S.W. Division of the Wireless Institute of Australia was held on Thursday, 21st February, 1924, at the Royal Society's Hall, when Mr. Jas. Nangle gave an intensely interesting lecture on wireless time signals. He first very clearly demonstrated the importance of accurate time and the difficulties in obtaining it. The lecturer then went on to describe the various time signals which are broadcasted daily, and showed how the exact time could be obtained.

Notice to Club Secretaries

Club secretaries are reminded of the meeting of club delegates to be held on March 19, 1924, in connection with the proposed co-ordination of radio clubs of N.S.W. All those who have not already forwarded their names and addresses, together with the name of their club to the Hon. Sec., W.I.A., N.S.W. Div., Box 3120 G.P.O., Sydney, should do so at once, so that invitations may be issued. This is an important matter, and should be treated as such by all experimental bodies.

TO RADIO CLUBS

Wireless Weekly will be glad to publish reports of meetings held by all Radio Clubs.

We would like copy to reach us before Friday in each week in order to ensure its publication in the ensuing issue.

Address all communications to The Editor, Wireless Weekly, 33 Regent Street, Sydney.



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

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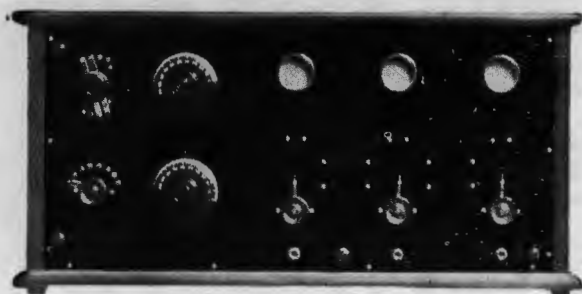
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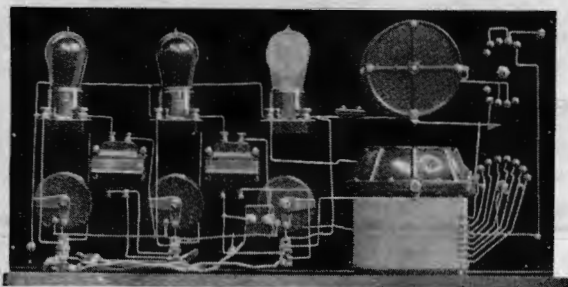
One door from Pitt Street

WIRELESS WEEKLY CUP COMPETITION

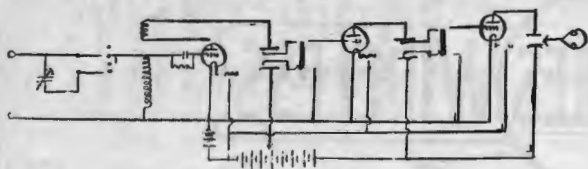
EXAMPLE SET



1. Completed Set.



INTERIOR OF SET



3. Circuit Diagram

THREE VALVE EXPERIMENTAL SET.

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

The Closing Date for the Cup Competition will be announced in an early issue.

Intending competitors will be well advised to send their nominations early.

Photos. of sets should be printed on glossy paper and the diagrams of the circuit should be drawn in ink.

The circuit of the set must be shown.

The diagrams need not be elaborate, but should show clearly the wiring and all necessary details.

What is Required.

Competitors are required to submit:

1. One photo. not less than 4in. by 3in., showing the set complete.

2. One photo. not less than 4in. by 3in., showing the wiring of the set.

3. An ink diagram not less than 4in. by 3in., showing the circuit and wiring.

4. A small paragraph of not more than 100 words describing the set.

5. The nomination form shown here, witnessed by a member of the committee of a radio club or any trader advertising in *Wireless Weekly*, or a local J.P.

6. Entries should be addressed to the Editor, *Wireless Weekly*, 33 Regent St., Sydney, N.S.W., and marked "Wireless Weekly Cup Competition" in the bottom left hand corner.

The interest shown locally indicates beyond all doubt that the winning set will be something in the nature of a perfect receiver.

Therefore we want as many experimenters to compete as possible. Our object in presenting this Cup is to encourage the development of the amateur movement, and we look forward confidently to the support of the experimenters. The sending in of less than fifty nominations would scarcely constitute a fair test, and we have therefore decided that that number will be the minimum for entries received.

Send in your nomination form now.

NOMINATION FORM

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

(Signed) _____

Witness _____

Mr. Maclurcan's Humourous Sayings.

WHAT WE HEAR BY RADIO.

People,—The next item will be a song, entitled, "Will the Chewing Gum Keep its Flavour on the Bedpost Over Night."

When one hears an announcement like this by radio, there is no doubt in the experimenter's mind as to where it originates.

Mr. Chas. Maclurcan (2CM) Strathfield, has for quite a number of years been entertaining experimenters every Sunday night, with his original and delightfully witty concerts.

Last Sunday night we listened in to hear his last transmission before his departure to U.S.A. on the S.S. Tahiti. Below are some of the amusing things we picked up:—

"Radio 2CM here, Chas. Maclurcan, Strathfield—on the Strath. . . ."

"The studio time is now between eight."

The next item is a song by the Operative Bakers' Union, "She Was Only

a Baker's Daughter, but O How She Kneaded My Dough."

This will follow immediately—in about three months.

Did I ever tell you the story—no, its quite alright, ladies, you needn't go out—about the lady with a young baby, who entered a tram the other day. She handed a £1 note to the conductor. He looked at her and said, "Is this your smallest?" "Yes, sir," she said, "I've only been married a year."

The studio time is now ten minutes later than when you last heard it.

The latest market reports will now follow:—

Market Reports

2CM here. For all your kind reports, people, I thank you from the hottom of my bart.

I see that "Wireless Weekly" has increased its power to one watt.

Have you noticed the awful number

of fires lately? Talking of fires, my cousin (on the father's side by the mother's wish), joined the fire brigade—and ever since he's been going to blazes.

Just a moment till the operator gets the "needle" and we will play for you on our No. 5 gramophone, that pretty little song entitled, "Do not Kiss Me, Mother, Now, I've had a Feed of Garlic."


Real Snap—2 valve set, Radiotrons, £9. Must sell. Demonstration, C/o. Electricity House, George St.

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Waverley Radio Club

A meeting of the club was held on 21st February. An apology from the President for his absence was read. A letter was also received from Mr. Malone re experimental licenses. It was decided to leave this stand over until further information on it could be obtained.

An invitation from the I.G.S. was also read, which unfortunately was too late to accept. The Wireless Institute also forwarded a letter concerning a meeting of club members to be held.

A kind offer from the Waverley press for the club to contribute a wireless feature weekly in its paper was accepted.

Mr. J. Marsland then moved, and Mr. D. Graham seconded, that the club meetings be held every Tuesday instead of Thursday, and that arrangements would be more convenient for some of the members. Carried.

The following meeting, therefore, would be held on Tuesday, 26th February.

Mr. G. Thomson then gave an instructive talk on various circuits, after which the meeting closed.

Conversation of a couple of men who know but can't place each other:

"Hello there."

"How's th' boy?"

(A nervous pause.)

"Haven't seen you round lately."

"No. 'S a fact."

(A nervous pause.)

"Seen any of th' ol' crowd lately?"

"No. . . . No."

(A nervous pause.)

"Don't get round much m'self."

"Same here."

(A nervous pause.)

"Great ol' days, weren't they?"

"I'll say they were."

(A nervous pause.)

"Well, I gotta step."

"Same here."

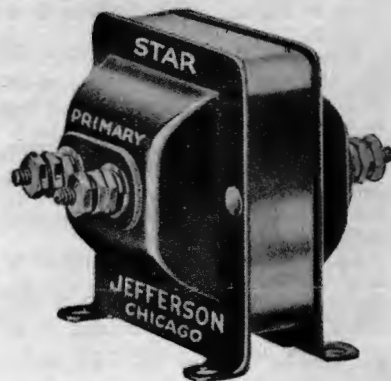
"See you again."

"S'long!"—"Judge."

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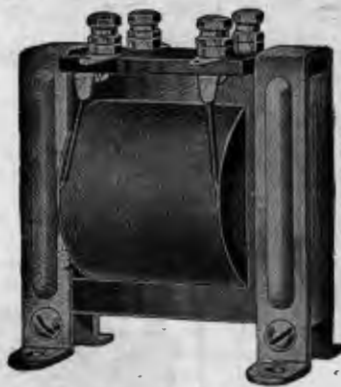
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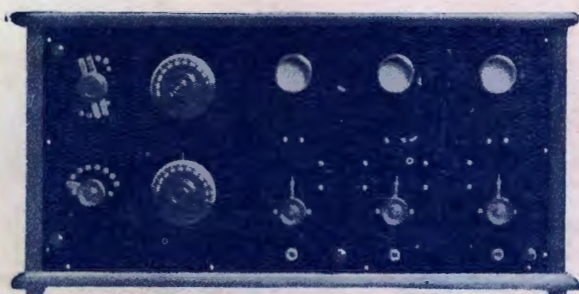
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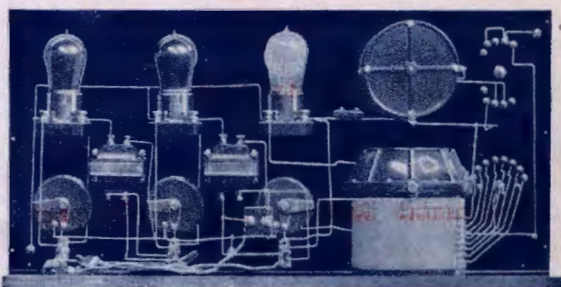
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INTERIOR OF SET

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Equitable Buildings, George St., Sydney
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Telephone: City 3566.

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

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21 Royal Arcade, Sydney
Telephone: M 3378.

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335 Pitt Street, Sydney
Telephone: City 6053.

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96 Bathurst Street
Telephones: City 869, 2596.

Radio Company Limited.

15 Loftus Street, Sydney.
Telephone: B 5586.

Radio House

619 George Street Sydney
Telephone: City 1487.

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Telephone: B2261.

Ramsay, Sharp & Co. Ltd.

217 George Street, Sydney.
Telephone: City 3176.

The Home Electric

106a King Street, Sydney.
Telephone: B 5565.

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296 Pitt Street, Sydney.
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N. P. Olsen,

18 Hunter Street, Newcastle.

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