

WIRELESS WEEKLY

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THE
100%
AUSTRALIAN RADIO
JOURNAL

Vol. 4
No. 4

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FRIDAY, MAY 9th, 1924

This Week's Feature: THE NEW PROPOSALS

The
Up-to-date
Man
Keeps
Up-to-date
on
Radio

Have you your copy
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Perpetual Radio Handbook

No Radio Fan can afford to
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Australian Distributors

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13 ROYAL ARCADE, SYDNEY

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Now is the time to purchase your material for the Set that you are going to construct this Winter, for as soon as the Open Set arrives, there will not be sufficient Radio Parts in Australia to supply the demand.

In constructing your Set, we recommend that you use the following:

United Transformer, technically perfect and used by all leading manufacturers throughout Australia.

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United Honeycomb Coils, properly wound, correct inductances
Most trustworthy and efficient Coil on the Market.

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Signal Fixed and Mica Condensers. Quick Heat Leaks.

In your Crystal Set use Q S A Crystals.

These and other "UNITED" and "SIGNAL" parts are for sale by all dealers

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— Manufacturers of —

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OFFICIAL ORGAN OF THE AUSTRALASIAN RADIO RELAY LEAGUE.

Vol. 4.

Friday, May 9, 1924.

No. 4

THE LATEST PROPOSAL.

The only acceptable clause of the first broadcasting proposal outlined on the next page is that relating to open sets. The rest of it constitutes one of the most non-progressive and monopolistic propositions ever offered to the long-suffering people of Australia. It simply means that, if the scheme is approved, broadcasting, which is rapidly assuming the proportions of a national question, will remain under the control of the same interests which have been responsible for the present sorry muddle.

Subscribers, who pay their money for the reception of first-class broadcasting, will also be privileged to listen to advertising. It needs no active imagination to visualise the state of affairs which will arise from the sandwiching of advertising matter into the programmes for which subscribers pay. It is a thing which is not tolerated in any other part of the world.

If only two or three per cent. of the population of Australia subscribed each an average yearly

sum of 30/- to the broadcasting company, there would be a revenue of something like £200,000. Add to this the revenue derived from advertising, and we have a nice little total with which the company proposes to run only six stations in the whole of this great Commonwealth. The estimated rate of progress and expansion is such that three years will elapse before further services are opened up.

There will be no competition of any kind, except amongst those concerns which are willing to expend thousands of pounds on conducting free services. The broadcasting company puts out what it thinks fit, and willy nilly, the subscribers must take it.

It has been stated that, with the example of Great Britain and the United States for guidance, Australia would be blessed with a broadcasting service as nearly perfect as possible. If this proposal goes through, there is nothing to indicate that Australia will be any better off, from a broadcasting point of view, than it is at the present day.

Roster for Week ending 14th May, 1924

	7.30 to 8.0	8.0 to 8.30	8.30 to 9.0	9 to 9.30	9.30 to 10	10 to 10.30
Thur, May 8	2 RA 2 GR	2 IJ 2 JM	2 YI	2 UW	2 YG 2 VM	2 ZG
Friday, 9	2 IJ 2 GR	"	2 UW	2 ZN "	2 ZZ	"
Saturday, 10	2 RA 2 GR	2 IJ	"	" "	" "	"
Sunday, . 11	2 RA 2 GR	"	"	" "	" "	"
Mon., 12	2 RA 2 GR	2 IJ	"	" "	" "	"
Tues., ... 13	2 IJ	"	"	" "	" "	"
Wednes., .. 14	2 RA 2 GR	2 IJ	"	" "	" "	"

The New Proposals

Here is the proposal which it is reported has been placed before Mr. Gibson, presumably by the group of firms which had until recently championed the cause of the Sealed Receiver.

1. The open set is absolutely accepted.

2. It is proposed to form one big limited broadcasting company (understand it is to be called the A.B.C. or the Australian Broadcasting Company).

3. To have one station only in each of the following cities. Melbourne, Sydney, Brisbane, Adelaide and Perth.

4. Stations to operate on 1000 watts (notice that this is one fifth of the proposed Farmers' wattage) and the new company is to have 6 months to get under full power, and licenses are not to be collected beyond 100 miles from the station until they are on full power.

5. The nominal capital of the new company is to be £200,000 in £1 shares with a paid up capital of £100,000 to be pro rated as on April 1, amongst the actual investments made by the then established broadcasting stations.

6. The new company is to take over all the present broadcasting licenses either by agreement or if necessary by arbitration.

7. In the allotment of the shares no one person or firm is to have over 5 per cent. of shares. These shares, however are open to transfer but no one person or firm shall ever hold over 10 per cent. of the capital except by special approval of the Government.

8. 25 per cent. of the capital is reserved for manufacturers and dealers.

9. The broadcasting company is not to receive over legal interest on its investment and after a period of three years the regulations are to be revised and any additional revenue accumulated to be used in constructing new broadcasting stations.

10. Licenses are to be collected by the post office department, and the following license fees include 5/- for the Government. To listeners in located within 25 miles from the station, 40/-; 25 miles to 40 miles, 37/6; 40 to 100 miles, 35/-; 100 to 200 miles, 32/6; 200 to 350 miles, 30/-; 350 to 500 miles, 27/6; over 500 miles 25/-.

Special licenses for hotels, picture houses and so forth ranging from £6 to £10.

Temporary licenses for shows, exhibitions and so forth, 20/- per week.

Dealers' licenses, £2.

Experimental licenses: All experimenters to be examined by the Government and to pay fee of 5/- to pass examination. If pass examination pay license, 20/- a year, 10/ of which goes to the company, and 10/- to the Government.

11. The new company can broadcast advertisements and charge for doing it.

12. All dealers and manufacturers must make their own arrangements in regard to patent licenses (Amalgamated.)

13. Free broadcasting stations will be allowed and will pay an annual license of £15.

ASSOCIATION MOVES.

At a special meeting of the Association for Developing Wireless, the above proposal was discussed, and a counter proposal was drawn up and despatched by telegraph to the P.M.C. The telegram read as follows:

Owing to information received from Melbourne to the effect that the proposals recommended at the recent conference were not acceptable to the P.M.C. this Executive supports the following proposals:

1. Open sets, no restrictions.

2. A broadcasting company to be established under regulations making it compulsory for every holder of a radio receiving license to pay a license fee, to such company, under penalty.

3. The share capital to be subscribed by radio interests and no one company, person or firm to be allowed to hold more than a determined percentage of the total subscribed capital, with a view to preventing any interests or section of interests obtaining control or creating a monopoly.

4. The return on such capital invested to be not more than 1 per cent. above the ordinary bank rate of interest for advances. Any surplus over and above such interest to be utilised for the improvement of the broadcasting service or in reducing the charge to the public.

5. Minimum limit of broadcasting services in all States operating continuously to be not less than two, excepting Tasmania which shall have one.

6. New company take over present broadcasting tangible assets by agreement or arbitration.

7. Free broadcasting stations to be allowed.

8. Advertising, allowable by free broadcasting stations.

BROADCASTING.

Remarkable Results.

Reports which have been received during recent weeks have indicated that remarkable results have been achieved in the broadcasting of speech and music, and also of theatrical productions from Sydney. The captain of a steamer has reported that on his own private set installed on his vessel he heard 2FC (Farmers' station) working when he was 2800 miles away from Sydney. Several letters have been received from New Zealand experimenters reporting the clear reception of speech and music, and more particularly still the reception of musical comedies broadcasted from Sydney theatres.

Miss Gladys Moncrieff has received a cablegram from some friends in New Zealand stating that some few nights ago, while "Sybil" was being produced at Her Majesty's Theatre, Sydney, they listened in during the evening and clearly heard "the whole show," including the musical numbers rendered by her.

It has also been reported that the wireless operator on the French steamer, "Pacifique," received speech and music from 2FC while the vessel was at Noumea, using for reception a crystal set.

CHICAGO TO NEW ZEALAND

The following interesting account of the reception of Chicago by W. K. Lane, Motueka, N.Z., was published in the New Zealand "Times."

MUSICAL ITEMS.

Received the following music and speech from W.J.A.Z. last night on a three-valve De Forest reflex set, coming in strength 7 on magnavox loud speaker. Picked up first at 6 p.m. singing and musical items until 6.30 p.m. Then announcer said: "The next will be a duet by Messrs. Ingram and Read, 'Hold your horses, we are off,' Station W.J.A.Z., Beach Hotel, Chicago; stand by for one minute please, while we change wave length from 448 metres to 370 metres."

The first item on 370 metres was a song. The announcer said: "You are

listening to W.G.M., 'Chicago Tribune,' hope you are getting this. The call, W. G. M., is used while on 370 metres." The next item was a song, and next a monologue, and clapping and cheering heard. Another song and more clapping was heard, then "Station W.G.M., Beach Hotel, Chicago; we will now close down for one minute. On resuming, the next items were: Song, "I want to go back"; song, Miss Ingram, "The bridge is falling"; song "Tell me will you forgive me, then will come back to you"; duet, "Hawaiian."

Announcer then said: 'The Zenith, Chicago: Let's us know how we are coming in on this wave length, 370 metres, in comparison with other wave lengths of 448 metres.' The announcer said: "Call letters W.G.M., for 370 metres, and W.J.A.Z., for 448 metres."

A REQUEST.

The next item was a Hawaiian selection, followed by the announcement: Station W.G.M., Zenith, Chicago, located on Beach Hotel, Chicago; address all telegrams to 'Tribune,' Chicago, telling us how we are coming in. Mention volume on new wave length."

The next song was: "Lost, my baby blue," sung by the composer, and then the announcement: "Station W.C.H., Chicago; the world's greatest newspaper; we have just received a telegram from New York which states: 'You are coming through fine in New York City; very strong. Congratulations. Red letter day for radio.'"

After a recitation and a selection of musical instruments the announcer then said: "We will now change wave length to 448 metres, as Australian amateurs registered us as 448. Stand by for one moment, please, while we change wave length on 448 metres."

SPEAKING TO NEW ZEALAND.

First item, song; then Mr. George Fenwick, address, "New Zealand and Australia,"; selection, "Drowsy Waters," followed, and the announcer then addressed the islands of New Zealand, Samoa, and Australia from Chicago. After a Hawaiian guitar duet, the announcer said: "We would like to get reports from all over the United States stating how we are coming in." Next came a speech to Samoa, New Zealand, and Australia. "We want reports from New Zealand, Samoa and Australia." The address was then given whom to send reports to, but static blocked it out.

CORRESPONDENCE.

To the Editor

Sir,—With reference to the reception of Interstate amateurs there seems to be one point which has been overlooked.

As you know there are many experimenters at present using the standard 3 coil circuit (that is, judging by the canary choir on 340 metres) and you are also aware of the difficulty which is often found in keeping down the oscillations in the circuit.

Now, is it not true that it is very disappointing to hear an undoubtedly distant station speaking when the speech is unintelligible owing to self oscillation?

Again, isn't it pleasing to know you have heard some distant station; but you don't know who it is?

Personally, I have listened to the same four or five stations night after night, but although I can hear "mushy" music, I have never heard anyone of them using straight C.W., and by time I have stopped the oscillations of the set, I have also lost the signals. Again, one is liable to confuse a combination of letters sent on phone on account of the similarity of certain sounds.

My whole remarks boil down to this:

Will those amateurs who are trying DX work please send their call signs a few times in straight C.W. for the benefit of "the likes of us"—say once every fifteen minutes?

Thanking you very much for bringing this matter under notice,

Yours etc.,

A. W. THURSTAN.

All experimenters will learn with keen regret that the wife of Mr. W. L. Hamilton, well-known as President of the Marrickville Radio Club is to undergo a serious operation at the Walmer Private Hospital at Marrickville. Wireless Weekly extends its very best wishes to Mrs. Hamilton for a speedy recovery.

15 Belgrave Street,
Waverley,
2nd May, 1924.

The Editor,
"Wireless Weekly,"
Sydney.

Dear Sir, dub
During the past week I have been doing a good deal of receiving on ama-

teur wave lengths, and the thing that struck me as peculiar is the number of amateur transmitters who consider themselves broadcasting stations.

They seem to think they exist for the purpose of sending nothing but music; if they think that music is going to make their station efficient, they are making a mistake.

Amateur transmitters in America have given up sending music long ago, in favour of CW and ICW. Certainly a little 'phone now and then to test the modulation of a transmitter is alright, but when a transmitter starts sending music at 10.30 a.m. on Sunday morning, and is still going at 10.30 p.m., then it is time he took out a broadcast license and charged us £3/3/- a year.

Another peculiar thing is that these 'Phone fiends seem unable to read or send Morse; I doubt if some of them own a key, and if another transmitter calls them in Morse they usually reply:

QRM PSE QRS (in 'phone), and it often means repeating three or four times before they get you. Furthermore, an amateur transmitter just starting up, has to call CQ at least half a dozen times before he gets a reply, particularly if he is sending CW, and it is the hardest thing to get anyone to test with, and when they do come back, they send only a few words.

These 'phone transmitters always seem to be building new transmitters, and when there is interstate work to be done their transmitters are usually in dock.

It is about time the transmitters got together and, instead of being jealous of each other's achievements, help to make the amateur movement as a whole more efficient.

Yours truly,

W. A. STEWART.

To the Editor

Dear Sir,—As a keen experimenter both pre-war and at the present time I have been following up the controversy re sealed sets. It appears to me that if the recommendations of the recent conference are adopted, it is difficult to say what is to become of one of the mainstays of our clubs, i.e., the junior members of say from 14 to 20 years of age, if the license fee is fixed at 40/- per annum. It means that boys and youths earning in the vicinity of 20/- a week in a lot of cases will have to give up wireless work.

Quite a number of people maintain that boys of this age are only playing at wireless work, but when one thinks of young Jack Davis who was associat-

ed with Mr. Chas. Maclurcan during his recent trip to America and who against all comers made a remarkable record in the Trans-Pacific tests some time ago, it is a sure enough answer to them.

We have in our Clubs some six members under the age of 20 years, all of whom have stated that if the license fee is fixed at 40/- they will be forced out of the game. Is that fair?

I would suggest that a junior license be issued to these boys at a much lower figure so that they would be enabled to dig still deeper into the depths of the wireless science.

Hoping you can give me space for this letter,

yours etc.,

M. WRAXALL.

Secretary Strathfield and District Radio Club.

A LINE FROM MAJOR MOTT.

Some weeks ago, we published a paragraph announcing that a station of the U.S. Army Signal Corps, located on Santa Catalina Island (Cal.) worked the polar expeditionary ship "Bowdoin," when she was 11 degrees

from the Pole. Major Mott, who evidently keeps in touch with Australian experimental matters through Wireless Weekly, now tells us that this report was inaccurate. He writes as follows:

"Mine is the station—on this lovely island—that has consistently worked the Macmillan Expeditionary vessel—"Bowdoin"—11 and 1/2 degrees from the North Pole, and when I say "consistently" I mean that for a period of three months I was in effective communication with the ship four nights of each week—doing a great deal of his press and accepting a great many messages for distribution throughout the U.S.

Hence: there was nothing "freakish" about the results! As power I was using a Western Electric 250 watt tube, on 240 meters, A.C. throughout—with 8 amperes in the antenna. Mix, the operator on the "Bowdoin," copied me directly on his typewriter—so QSA were my signals—with no Q SS!

You derived the fact that this is a "Signal Corps Station" from the fact that all the American press—and the

Associated Press—have referred to me by my army title, i.e., "Major-Signal Corps, ORC., U.S.A." But the station is mine own—that I use for experimental and research purposes. True I do a deal of reporting of results that I attain, to the Chief Signal Officer, at Washington, but, as I have said, the station is not an "Official Army Station."

Permit me to add there are many American amateur stations that have had almost, if not quite, as good results as have I. The point in this, however, is that mine is the station at the greatest distance—air-line—from the Polar vessel.

It was a keen disappointment to me not to be able to get to San Francisco to meet Maclurcan. I could not "make the grade," unfortunately.

The set on the "Bowdoin" consisted of two 50-watt tubes, operated from a large storage set—that, in turn, was kept charged by a Delco lighting plant."

With every good wish,
Cordially,

LAURENCE MOTT,

Major-Signal Corps, ORC., U.S.A.

Prices and Quality are O.K. at BURGIN ELECTRIC CO.

We are the SOLE AGENTS in N.S.W. for "Bestone" apparatus and have just landed large stocks of this well known line.

Study these prices and with our assurance behind them you can rest content that the quality is there.

- Audio Frequency Metal Shielded Transformers 32/-
- Variable Condenser, 11 plate, 18/-; 23 plate, 21/-; 43 plate 25/-
- Variable with Vernier and Dial, 43 plate, 46/-; 23 plate 40/-
- Bakelite V.T. Socket, 5/-; Dials, 3in., 3/-; 30 ohm Rheostat, 9/6; Metal Binding Posts, 4d. each; Composition Binding Posts, 6d. each.
- Shur-grip Plugs, 5/6; Sta-put Plugs, 3/6; Multi-plugs, 13/6; Variable Grid Leaks, 10/-; Rotary Inductance Switch, with dial, 10/-.

PAY US A VISIT. OUR PRICES ARE REDUCED ON MANY LINES DUE TO THE REDUCTION OF PRICES OVERSEAS. OUR SHOWROOMS ARE SITUATED ON THE FIRST FLOOR OF CALLAGHAN HOUSE, over Callaghan's Boot Shop, 391-3 George St., Sydney.

BURGIN ELECTRIC COMPANY LICENSED WIRELESS TRADERS

Manufacturers of the Famous "BURGINPHONE" Receivers

Good Reception

Mr. Harry Wiles, of the firm of W. Harry Wiles, is at present enjoying a vacation at Barraba, which is 300 miles or so from Sydney. With the object of obtaining something in the way of geographical data, he has along with him the Wiles 4 valve Inverse Duplex Receiver which model, after months of experiment, the firm has brought to perfection.

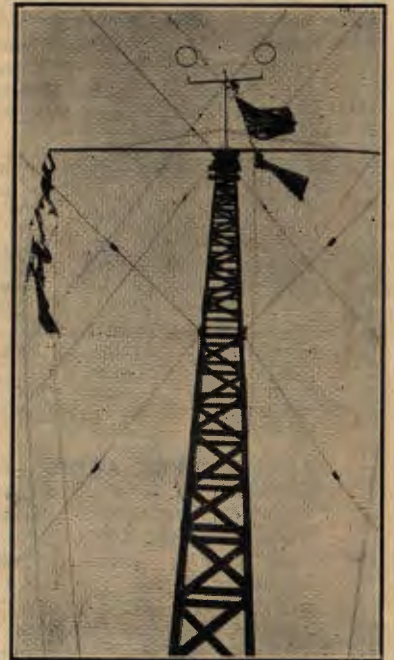
The following extract from Mr. Wiles' letter is interesting.

"On a single wire aerial, 45 feet long and 25 feet high, I picked up 2BL last night and gave the household two hours' entertainment, my chief concern all the time being that some of the crowd might drop dead with excitement. I got full programme commencing with opening selection by the orchestra and the announcer's good-night remarks. The vocal items could be easily heard 50 yards away."

2CI's New Mast

The photograph shows the lattice wood mast recently erected by R. D. Charlesworth, Haberfield, Sydney.

The height of the spreader is 83 feet while the tip of the mast is just 89 ft. above ground. The aerial is of the two cage umbrella type and a 4 wire fan counterpoise assists considerably. 2CI will be on the ether again very soon.



Outside view of Wiles' Pavillon



Fine Display by W. Harry Wiles at Royal Agricultural Show.

See WILES' WONDERFUL WIRELESS on Back Cover.

The Colville-Moore Wireless Supplies

Experimental Apparatus of Proven Quality

New Regulations about to begin.

Book your orders early for Open Sets.

SWITCHES.—Aerial Switches (see first column). Colmo, bushed, N.P.; 1-1/8 in. rad., 2/3; 1 1/2 in. 2/6. Remler, 83, 1 in. radius, 2/3. Remler, 82, 1 1/2 in., 3/-; 98, 1 1/2 in., 4/6. Master, 1101, 3/-; 1102, 3/6. Bestone, tapered, 2/6. Single pole, 2 way, with studs and stops, 3/4. D.P., 2 way, series parallel, with studs and stops, 7/6. Marco, series parallel, back mounted with terminals, 3/4. Marco, D.P.D.T., back mounted with terminals, 8/4. Battery switch, Marco, 6/-. Switch blades, N.P., 3d. each. Marco, back mtd., inductance switches, 5 point, 6/8; 7 point, 8/4; 9 point, 8/4; 11 point, 10/-.

TELEPHONES.—Baldwin type, "C," 75/-; type "F" and "G" £4. Baldwin units for loud-speaker 37/6. W.E., American, 2,200 ohm; £3/10/-; English, 4,000 ohm., 44/-; 8,000 ohm., 45/-; Trimm, dep., 2,200 ohm, 32/6. Professional, 3,000 ohm., 45/-. Penberthy, 4,000 ohm, 40/-; 2,000 ohm, 32/6. N.S.T., 2,000, 4,000, 6,000, 8,000 ohms, 40/- each. Mell. 'phones, 4,000 ohms, 25/-. Mell., single, 15/-. Mell., De Luxe, lady's type, 40/- Frost, single 'phones, 15/-. Bestone, 2,200 ohm, 32/6. Brown, type A., 6,000, 8,000 ohm, £5/15/-; Type B, 2,000 ohm, £4/11/6. Type F., 4,000 ohm, £2/7/-.

TRANSFORMERS, AUDIO.—Jefferson, Star, 27/6. Jefferson, 41, 35/-. Airway, Case, 27/6. Shielded, 37/6. United, 35/-. Transformers, radio frequency, Master, 200 to 600, 32/6. Federal, 200 to 600, 45/-. Penberthy, 200 to 600, plug, in American socket, 7/6. R.C.A., 1714, 200 to 5,000 metres, 45/-. Transformers, high tension, 2 low voltage windings, and high tension, up to half kilowatt, £6/10/-, made to specification.

VARIOCOUPERS.—200 to 600, 37/6. Remler, 200 to 600, 32/6. Gilfillan, 150 to 1200 metres, £2/18/-.

VARIOCOUPLER PARTS: Grodan, 4 x 4; thick cardboard tube, wooden rotor and spindles, 6/6. Variocoupler, spindles, 1/6. 4 in. ebonite stator, 3/6. Signal ebonite rotor; 5/-; spindles, 1/6.

VARIOMETERS.—Manhattan, 37/6. Bestone, moulded, 32/6. Remler, 45/-. Airway, wood, 25/-; moulded, 35/-. Variometers, spindles, 2/6 set.

VALVE CONTROL PANELS: Base 5 x 3 1/2 x 1 1/2, bakelite, complete with grid condenser, American standard socket, rheostat, 8 terminals. Can be easily hooked up to any circuit, 30/-. Remler, 331, control panel, £1/15/6. Remler, 333, amplifier, control panel, £2/10/-.

VALVES.—Radiotron, 201A, 200, 199, W.D. 12, 35/-; 202, 5 watt, 50/-. Kentron, 5 watt, 50/-. Marconi "R," 25/-. Der., 35/-. V. 24, 35/-. De Forest, D.V., 6A, 35/-. Phillips, 19/6. Mullard Ora, 21/-. Audiotron, 50/-. Ediswan AR., 21/- Ediswan ARDE, 35/-.

VALVE HOLDERS, IN SOCKETS.—American standard, Remler, 6/-. K. and C., 6/9. Signal, 3/6. U.V., 199 socket, Remler, 6/-. Signal, 3/6. Adaptors, U.V., 199 to American standard socket, K. and C., 6/9. Marco, 4/4. Eng., valve socket, 2/-.

VALVE PINS.—Split, with nuts, 1/3 set. Socket, 1/3 set. Marconi, V. 24, clips, 3/6.

WIRING WIRE.—18 gauge, tin copper, 4/- lb.; 2d. per yd.

ALL PARTS IN PRICE LIST NICKEL PLATED UNLESS OTHERWISE STATED.

ONE VALVE SET.—Variocoupler tuning, wave length 150 to 1500 metres, complete with vernier Condenser, valve accumulator, H.T. battery, 'phones, aerial wires, etc., Cabinet 11 x 12, with dry cell. Price, £13. Valve requiring accumulator, £16; Honeycomb coil tuning, with coils covering to 150 to 1500 metres, £1 extra on above prices.

TWO VALVE SET.—Complete as above, with jacks and plugs for using either one or two valves. With dry cell valves, £22. Valve requiring accumulator, £25.

THREE VALVE SET.—Complete as above, with additional jacks, etc., £34/10/- and £37/10/-.

FOUR VALVE SET.—£42 and £45.

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Colmo Apparatus is of the highest standard of efficiency, and in using same the amateur can proceed with his experiments with the certainty of successful results.

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When ordering by mail, please enclose remittance for postage. All primes quoted are F.O.B., Sydney.

Where no cash is received, goods will be sent Value Payable Post, as our business is conducted on the Cash With Order Basis, owing to low list prices.

We are Direct Importers of all Wireless Goods, and our stocks are being constantly added to. Therefore, you can depend on always receiving the latest apparatus. If it is not in this list it is most likely in stock.

Every care and attention is given to orders in handling and packing. We cannot be held responsible for damage or loss in transit.

When ordering, please describe articles EXACTLY, as per above lists.

KEEP THIS PRICE LIST BY YOU

Colville - Moore Wireless Supplies Limited

PHONES: Office and Sales . . . B2261
Works B1721

10 Rowe Street, Sydney.

To Club Secretaries

For the information of Experimenters generally, "Wireless Weekly" would be glad to publish a revised list of Radio Clubs. Secretaries are therefore asked to forward us the following particulars: Name of club, address, time, date and place of meeting, secretary's name and address, number of members in club.

FOR SALE—Monodyne 1 valve set, in good order, with 'phones and batteries, £3/10/- George E. Cooper, 35 Tabrett St., Banksia.

WIRELESS ON H.M.S. HOOD.

"Wireless Weekly," being dedicated to the wireless cause, it would naturally follow that the visit of the special service squadron would bring many interesting wireless details in its train. Quite one of the most interesting wireless personalities of the squadron, it was our pleasure to meet, was Mr. C. J. Pitts, leading telegraphist of H.M.S.

Hood. Mr. Pitts spent quite a considerable time at the signal school in Portsmouth, where he naturally gained a most comprehensive knowledge of radio, and the efficient working of H. M.S. Hood is ample proof of the comprehensiveness of his training. Like all true members of the silent service, he was extremely loth to speak of the inner workings of the wireless services, but from the few guarded words he let drop it gave ample evidence that a mass of interesting material to the wireless enthusiasts of New South Wales was available if only he were at liberty to mention them.

One thing that Australian experimenters will be pleased to have confirmed is the praise given to the efficient working of the Australian coastal stations, by Mr. Pitts. He says that for all round efficiency he has but rarely heard their equal, and taking them by and large, the manner in which they handle their stations reflects the greatest credit upon Australia. These words coming from one of the personnel of such an efficient service of that of His Majesty's navy must indeed be a source of pleasure to us all.

One item of news Mr. Pitts let drop was the fact that there were 49 wireless

operators on H.M.S. Hood, and five operators were simultaneously keeping watch on five different wave lengths. Never at any time since the squadron left England have their operators been out of touch with Leyfield, so that the effective receiving range of H.M.S. Hood may in every way be said to be world-wide. Every day press was copied by the battle cruiser from practically all the existing high-power stations, and Mr. Pitts said that one of the most pleasureable moments he experienced was when he listened to VIS transmitting Australian news. Mr. Pitts was very much impressed with Australia, and let drop a guarded hint that his inclinations are tending towards drawing him back to Australia, and if such is the case, he will, we are sure, experience a very happy reunion with those friends he has left behind who wish him and the special service squadron so many of the good things that Australians alone can extend.

Have you tried disposing of that old Loose Coupler, or that Transformer, through the columns of "Wireless Weekly"?

3 lines, 1/6.

6 lines, 2/6.

ANNOUNCEMENT

We are pleased to notify our customers, both Wholesale and Retail, that we are now ready to quote for the erection of aerial masts from 30ft. to 200ft. in either Wood or Iron, also for flags of any design.

E. H. BRETT & SONS LTD.
LITTLE AVENUE. BALMAIN EAST
Phone W 1205



Misconceptions of Reception

(By Edward T. Jones, in "Radio," San Francisco.)

For the benefit of the novice the author here explains why daylight reception of distant stations is not possible, why one receiver may be more sensitive than another, why signals fade, and why amplification is used.

How many times a day is this question asked: "Why is it that I cannot receive anything in the daytime?" This from people situated some few hundred miles away from a powerful broadcasting station. The other day a lady asked if she could get in touch with someone with a radio receiving set in New Orleans who would permit her to listen to her daughter singing at a broadcast studio in New York City. The selection was to be put on the air at 3 p.m., New York time, which is 1 p.m. at New Orleans. While I do not know exactly what "freak" day reception has been recorded from the New York broadcasting stations, I believe I am safe in saying that they do not generally reach out much further than their written guarantee, which I understand to be 100 miles with a 500-watt transmitter.

Now for a shock: All broadcast reception from 300 to 1000 miles or more is nothing more than freak reception. In other words—it was not intended for you—way out there—and you are fortunate that the sun takes a rest for the night. Now with that jolt well under your belt—let me alleviate the situation for you. . . . Very good results are obtained during the night over great distances throughout the year, except in some places where static predominates for several months.

If I stand 100 feet from you and whisper, you hear nothing of it. That's exactly the case of the powerful broadcasting station 300 or more miles from you in the day time. The energy is absorbed before it reaches you and you cannot pick up the signals during the day time, with the present receiver. They may be reaching you—but the present-day receiver, which is exceptionally sensitive, does not record it.

At sunset the waves spread out farther from the transmitter and 300 miles away you are beginning to hear the carrier wave (this is the whistle heard when tuning for the stations). The voice is too weak to be understood. As you listen from that time on—as it gets darker and darker—the carrier wave becomes louder and louder, until finally the voices and music can be understood and the programme enjoyed. Probably by that

time stations hundreds of miles beyond your range are listening to the same concert. As it gets later into the night the signals continue to increase until a loud speaker can be used very easily and in many cases less amplification will operate even a batteryless loud speaker.

A very efficient receiver is required to record a feeble carrier wave. You may own a receiving set manufactured by a concern having all the facilities for the proper construction, while your neighbour has thrown a few pieces of apparatus together in order to "get results quick." You hear the carrier wave at sunset, but he does not get reception from that particular station until later in the night. His receiver requires a much stronger signal to actuate it—while yours is exceptionally sensitive and records the very weak impulses. I do not want to convey the idea that it is not possible to construct a very efficient receiver in your own workshop, but want to bring home the truth about the matter—that there are too many sets being thrown together instead of being put together in accordance with the instructions and data given so freely and so cheaply in this and many other radio magazines. In other words, "Don't blame the tools—blame the builder."

If you are interested in building a set which you have not seen advertised or fully described in these magazines, get in touch with someone who can actually tell you something about it. Write to the editors; but by all means do not take the advice of someone who has built one set and was fortunate enough to get it to work—you may not have such good luck, because of the possibility of receiving incorrect information regarding the same set. There are too many radio experts made overnight because of the fact that they succeeded in building a radio set that worked.

While listening to the distant station which just barely reached you at sunset you may notice that the signals are barely audible for a time and gradually fade out—getting weaker and weaker until you cannot hear them.

Then, after a short time, they began to build up again, until they finally reached their original value. This may also happen all through the period of reception. This is a condition which cannot be controlled at the receiving end. A readjustment of the dials will not increase the signal strength, and it will continue to fade out and come in. This may be due to changes in atmospheric conditions between you and the transmitting station, changes in cloud strata, and many other purely theoretical reasons may be offered, but no one actually knows what causes fading. When a station is fading badly any particular night I strongly recommend that you "get off" and tune in some other station that is in an entirely different direction where this condition may not exist that time. You will find this to be the only solution to this problem, which confronts all of us at one time or another.

Retuning of the instruments only makes conditions worse—and the signal being very weak at about the time you are trying to "get it back in" causes you to lose the station entirely.

A one-tube receiving set will receive as far as a two or three-tube audio-frequency set. The one-tube (detector) picks up the signals—if they are to be heard at all. Therefore, no matter how many stages of audio-frequency amplification are added, you are not going to pick up stations from greater distances. Of course, "picking them up" and "hearing them" are two different things. The added amplification builds up the signals to a point where they become audible in the telephone receivers and, furthermore, to the point where they will operate loud speaking horns, and, when desired for a specific purpose, operate recording relays.

The one-tube receiving set confines the listener to the earphones, which makes it impossible for other members of the family to comfortably enjoy the exceptional programmes which are being broadcasted every night. One stage of amplification will in some cases help to permit the addition of several pairs of headsets or even work a loud speaker, but in a great majority

of cases it is absolutely necessary to make use of the two stages of audio-frequency amplification.

Generally speaking, crystal receivers are only good for local reception. You will, however, be surprised to learn of many freak receptions with such apparatus. Aboard ships lying at their piers in the harbour we have been able to pick up many of the powerful stations in the country with a fair audibility. Of course, the antenna employed aboard shipboard is very large and capable of delivering considerably more energy to the receiver than the average BCL's antenna.

For long-distance reception I would not think of using a crystal set under any conditions. In the first place it is a tedious task to keep the mineral in a high state of sensitivity—which is so necessary—and, furthermore, you have to practically remain in a state of coma while receiving in order that you might not "knock out" the detector adjustment. A crystal set is only recommended for use in the immediate vicinity of a broadcasting station.

A Congressman once declared, in an address to the House:

"As Daniel Webster says in his great dictionary—"

"It was Noah who wrote the dictionary, whispered a colleague, who sat close by.

"Noah, nothing," replied the speaker. "Noah built the ark."—Exchange.

Would You Like to Answer?

Here is what "Dallas, Texas," wrote to the editor of "QST" official organ of American Radio Relay League:—

Dear Sir,—I have been advised that you are a pretty good authority on matters pertaining to radio reception and transmission, and would like to ask your advice on several matters which have puzzled me for some time.

I have a 5-kw., double-barrel, seven passenger, triple-valve, non-skip outfit, complete with U.S. safety appliance (standard), and Timkin rear axle, which I use in connection with a 210-volt, hammerless, self-winding, automatic, 16-jewel, nickel-plated, Marconi antenna with pneumatic tyres. Have had a great deal of trouble with my Galena at night since I started using vegetable compound, but get better results by painting it with iodine.

I can get undamped waves all right

with my regenerative vacuum sweeper in dry weather if I use my Curtis rubber ear cushions, but on Sundays I find that my rheostat keeps interfering with the differential, so that it is necessary to cut in a small .0055 M.F. washboard between the piano and the kitchen sink.

Until recently I used a five-string, tenor, hardwood amplifier, with 240 turns of No. 4½ barb wire around the front sight cover, but I found that with this arrangement the felicity of the heating element had a tendency to become impregnated with the pigment from the valve stem, so on advice from General John Pershing I removed the drift slide and substituted a duplex automatic stoker, which allows the left dorsal ulna bone to oscillate between the hydrometer and the upper sling swivel, and prevents the choke coils from short-circuiting the permanent wave length.

Tests with South Africa

Tests have been arranged with the Radio Society of South Africa to take place during the middle of the month. Any Australasian transmitting station may transmit during any part of the Australian transmitting periods and it is requested that all stations will take part in the test in spite of the hours which are necessarily inconvenient. Reports of reception of any South African stations in Sydney during the test period should be sent to Wireless Weekly for inclusion in the official test log to be sent to South Africa. Victorian experimenters are requested to report any South African calls logged to Mr. E. H. Cox, of Gisborne St., Elsternwick, Melbourne, that the results of the tests may be cabled to South Africa. During the Australian transmitting period a report will be cabled daily from South Africa, and any Australian stations heard will be notified at once. The schedule is as follows, all times being Melbourne time:

South African stations transmit—May 18 to May 24 . . . 4 to 7 a.m.

Australasian stations transmit—May 25 to May 31 . . . 4 to 7 a.m.

South Africa stations transmit—June 1st to June 7th . . . 4 to 7 a.m.

Australasian stations transmit—June 8th to June 14th . . . 4 to 7 a.m.

Each station will transmit for a period of half an hour sending its own call and a four letter identification code call. All wave lengths must be made as nearly 200 metres as possible and the International experimental break sign (for Australian stations, ZA) must be used.

I was wondering if by placing the blow-off cock in juxtaposition to the universal joint on the loop aerial, and using an emergency application of air on the primary windings, would the cubic capacity of the variable condenser in any way effect the centrifugal dirt collect of the three-day switch of the microphone, and, if so, would this be a reversible reaction? Also do you think that by using more chalk and a little high English on the cue ball, would the pilot beam interfere with the insulation on the superheater pipes? Any suggestions you have to make in regard to the foregoing matters will be greatly appreciated by me.

Wife (in back seat): "Henry, dear! You mustn't drive so fast!"

Husband: "Why not?"

Wife: "The motor policeman who has been following us won't like it."—
"Judge."

The Colville Moor

Experimental Apparatus

New Regulations about to be Gazetted

AERIAL WIRE.—3/20, 2/9; 7/20, 6/6; 7/22, enamel, 6/6 per 100 ft. Heavily insulated, 5/22, 3d.; 1/18, 2d. per yard.

INSULATORS.—White, reel, 4d. Strain, green egg type, 5d. Brown, loop, 8d. Electro-se, 1/-. Ebonite, 2/6 each. Lead-in insulators, porcelain, 9d. Ebonite, 6in., 1/6; 9in., 2/-. Marconi, 6in., 6/6 each.

ACCUMULATORS.—Exide, 2 volt units, 2 volt 40 amp., 21/-; 2 volt 60 amp., 26/-; 2 volt 80 amp. 33/-; 2 volt 100 amp., 38/6. Higher voltages made up in 2 volt units, straps supplied. Batteries charged or dry same price.

AERIAL SWITCHES.—S.P.D.T., porcelain base, 3/-. D.P.D.T., 5/6; N.P. on ebonite base, S.P.D.T. 4/8. D.P.D.T., 6/8.

BATTERY SWITCHES.—4/6. Marco, 6/-.

BATTERY CLIPS.—6d. each.

BATTERIES.—Ever-Ready, 31 volt, 9/6; 42 volt, 12/6; 4½ volt, flash-light type, 15/- doz. Red Seal, 1½ volt, 2/9. Hellisen's, 45 volt, 13/6; 60 volt, 21/-. Diamond, 1½ volt, 6/8.

BUZZERS.—Watch type, 5/-. Square, 6/- each. Transmitting, high tone, 15/-.

BAKELITE SHEET.—1/8th, 10/6; 3/16th, 16/-; ¼, 24/- per sq. ft.; small quantities, 1d., 1½d. and 2d. per square in.

BINDING POSTS.—N.P., 4d., 5d. and 6d. each. Bakelite, top, 5d., 6d. each.

BEZELS.—Or Peep Screens. United, ¼in., 9d., 1½ in., 10d. each. Marco, moulded, ¼in. and 1½in., 1/3 each; black finish, 1/6.

BRADLEYSTATS.—Universal, for all tubes, 12/6.

CONDENSERS, FIXED.—Colmo, .00025, .0005, .001, 1/6; .002, 2/-; .006, 5/3; Dubilier, 601, .00025, 2/2; .0005, 2/2; .001, 2/6; .002, 2/6; .003 and .004, 3/2; .005, 4/-; .006, 4/8; 610, moulded, .001, .002 and .0025, 4/8; .003, .004 and .005, 6/2 each; .01, 8/2; .02, 9/2; .00025, with clips for leak, 3/6 each.

CONDENSERS, VARIABLE.—Colmo, without dials:—

Plates.	Capacity.	Knockdown.	Assembled.	Vernier.
3	.0001	6/6	7/6	
5	.0002	7/6	8/6	
9	.0003	8/6	10/-	
17	.0006	11/-	12/6	20/-
25	.0008	13/6	15/6	
35	.001	15/-	18/6	26/-

MASTER VERNIER CONDENSERS.—With cal. dial, Vernier knob, 11 plate, 36/-; 23 plate, 39/6; 43 plate, £2/3/6. Without Vernier and cal. dial, 23 plate, 25/-; 43 plate, 30/-. Dubilier, variodon, .0004, 15/6; .0006, 15/6; .001, 20/-. Airway, 5 plate, 12/6; 13 plate, 15/-; 23 plate, 17/6; 43 plate, 25/-.

CONDENSER SUNDRIES.—Mov. and fixed plate, 1/9 per doz. Mov. washers, 10d. per doz. Fixed washers, 6d. per doz. Ebonite end plates, 1/9 pair.

CRYSTALS.—N.H.M., Galena, tested and guaranteed, 2/- and 1/- each. Q.S.A., 1/6. Iron pyrites, 1/6 and 1/-. Silicon, 1/6 and 1/-.

CRYSTAL DETECTORS.—Glass encl., 12/6. Penberthy, multi-point, encl., 9/6. Mounted ball, joint type, with 2 terminals, N.P., 6/6. Brass, 4/-. Unmounted, on card, 2/9.

CRYSTAL CUPS.—Colmo, round table type, 10d. Hexagon, 11d. Panel mounting, 1/-.

CONTACT STUDS.—N.P. ¼in. and ½in. shank; with nut, 1/6 per doz. Stops, 2d. each.

CHOKE COILS.—Meyers, intervalve, 22/6. Transmitting, 2, 4 or 6 Henry, 37/6; 8, 10 or 12 Henry 50/-; 20 Henry, £3/10/- to £4/10/-.

DOUBLE SLIDE TUNERS.—Colmo, 37/6. Penberthy, 45/-.

DIALS, CALIBRATED—For rheostats—Signal, 2in., 1/6; Master, 2in., 4/-; Potentiometers, Master, 2in., 4/-. For condensers, 3in., 2/-; 4in., 2/6. Bestone, 3¼in., 3/6. Master, Bakelite, 3in., 4/6. Remler, Bakelite, 3in., 4/6.

EBONITE SHEET.—1/8th, 8/6; 3/16ths, 11/-; ¼, 14/- per sq. ft.; smaller quantities, ½d., 1d., 1½d. per sq. in. Ebonite tube, 3¼in. and 4in., outside diameter, 10/6 per ft.

GRID LEAKS.—Fixed, "Quick Heat," ½, ¾, 1, 2, 3, 3, 4, 5 meg., with N.P. clips, 3/- each; 100,000, 50,000, with clips, 3/6. Dubilier, 2 meg., 4/6. Variable grid leaks, Freshman, 0 to 5 meg., 5/-; with .00025, fixed con., 6/-. Marco Vari., 0 to 5 meg., 10/- each. Bretwood, 0 to 5 meg., 5/6.

FLEX.—Heavy duty, 7d. Miniature, 4d. per yd.

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Phones (Office and Sales): B2261. Works: B1721.

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GIBLIN REMLER COILS.—20, 25, 35, 4/6; 50, 4/9; 75, 5/-; 100, 5/4; 150, 5/8; 200, 6/-; 250, 6/9; 1000 turns, 17/6; 1250, 20/-; 1500, 22/6. Q.S.A. Coils, 4 taps, with .001 condenser tune, 1,000, 15,000 metres, 35/- each.

HONEY-COMB COIL PLUGS.—Remler, 40, 3/6; 48, for coils 25 to 750 turns, clamp type, 3/6; 49, for coils 750 to 1500 turns, 5/6.

HONEY-COMB COIL MOUNTINGS.—Remler, 42, fixed plug, 3/6; 43, mov. plug, 5/9; 44, extension handle, Remler, 2/- each. Remler, three coil mountings, on bakelite stand, complete with extension handle, 38/6. English three coil mountings, 32/6. English two coil mountings, 20/-. Gimbolder, 2 coil mounting, 25/-. Coil mounting strip, 3d. per ft.

HYDROMETERS.—For testing accumulators, 6/6.

JACKS.—Marco, fibre insulation, open circuit, 2/6. Double circuit, 3/9; open circuit, with filament control, 4/-; double circuit, with filament control, 4/6. Marco Formica insulation, open circuit, 3/6; double circuit, 4/6.

KEYS.—Practice, 10/6. Transmitting, 18/6. K. and C., 22/6.

KNOBS.—Polished ebonite, 5/8th, 9d. lin. tapt., 3/16th, 1/3; 1½in., tapt., 3/16th, 1/6. Remler, Bakelite, 1/6. Master, 3/16 and ¼ shank, with set screw, 1/9.

LIGHTNING ARRESTERS.—W.E., 5/9. Jewell, 8/9.

LOUD SPEAKERS.—Magnavox, Amplivox, C.A., 2F, £40; A2R, £25; A1R, £17; R3, £10/10/-; M1, £10/10/-. Atlas, amplitone, Adj., £7/10/-. Atlas unit, with gramophone attachment, £3/17/6. W. E. Baby, £3/10/-. 521W., £9/15/-. 10D., £17/10/-. TMC, £9. Amplion, Junior, AR39, £4. Amplion, Junior De Luxe, AR43, £5. Dragon type, AR19, £8. Music Master type, AR 15, £9.

LOOSE COUPLERS.—With range 100 to 1500 metres, £3/15/-.

LOOSE COUPLER PARTS.—Primary ends, pine, 1/9; maple, 2/-. Secondary ends, pine or maple, 9d. pair. Base boards, pine, 1/9; maple, moulded edges, 3/-. Primary wire, 2/-. Sec. wire, 1/6. Sliders, 6½in., 3/-; 8½in., 3/3. Sec. sliding rods, brass, 1/6; N.P., 2/6. Cardboard tubes, 6in., 6d.; 8in., 8d. Sec. switch, 2/3; 8 studs and 2 studs, 1/4.

METERS.—Stirling, 50 volt, pocket type, 15/-. Elite pocket amp meter, 7/6; volt meter, 0 to 10, 7/6. Panel volt meter, 0 to 20, 7/6. Hoyt peep hole volt meter, 0 to 10, 22/6. Hoyt peep hole amp meter, 0 to 10, 22/6. Eldridge Rdo. Freq., 52/6. Western Thermo Rdo., Freq., £4/10/-. Western plate milliamp meter, Jewell Thermo Rdo. Freq., £3/17/6. Motor car type, charged and discharged, 10/6.

Roller Smith Thermo Meters, 0-500 M. amp., £3/5/-; 0-1 amp, £3/10/-; D.C. Volt Meters, 0.600, £5/5/-.

NAME PLATES.—Ivorite, 'phone, aerial, B battery, earth, A. battery and tuner, 4d. each.

POTENTIOMETERS.—De Forest, 400 ohms, 11/6. Master, skeleton type, 250 ohms, 11/6. Master, moulded bakelite, 300 ohm 14/6; 400 ohm, 16/6. Marco, 600 ohm, 12/6. K. and C., 200 ohm, 11/9.

PLUGS.—Telephone, Marco, stay-put, 2/8. Stay-put, junior, 3/4. Sure-grip, 5/-. Multi-plug, 13/4. Bestone, multi-plug, 9/6.

RECTIFIERS.—Tungar, 2 amp., £6/10/-; 5 amp., £9. Home charger, 15 amps., £8/10/-.

RHEOSTATS.—Remler, junior, 3 ohm, 6/3. Remler, 6 ohm, 8/6. Remler, power rheostat, 3 amp. capacity, 11/6. K. and C., 6 ohm, 7/3. K. and C. vernier, 6 amp., 10/-; 20 ohm, 8/6; 60 ohm, 8/6. Colmo, 6 ohm, 5/6; 20 ohm, 6/6; 30 ohm, 7/-. Marco, 30 ohm, 6/8. Ingranic, 6 ohm, 8/6; 6 ohm, vernier, 11/6; C. and H., vernier rheostat, 6 ohm, 11/6. Bradleystat, 12/6.

SOLDERING OUTFITS.—Electric soldering irons, £2/5/-. Blow-torch soldering outfit, 7/6.

SCREWS.—N.P., with nut, ½ to lin., 1/6; 1½in., 2/-; 2in., 2/6 doz.

STUDS.—N.P., ½ and ¾in., with nut, 1/6. Stops, 2/- per doz.

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Telephone City 3688 1 door from Pitt St.

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

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

Radio House
619 George Street Sydney
Telephone: City 1487.

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

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

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

Swains Ltd.
119-123 Pitt Street, Sydney.

Counterpoise v Earth

By C. W. Slade (2SX.)

Have you a good earth?

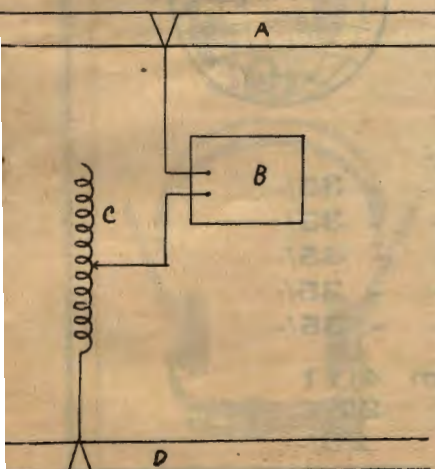
You don't know unless you have used a counterpoise. The writer has a very elaborate and expensive earthing system but from actual results obtained the balanced aerial or counterpoise system has proved to be by far the most efficient. The counterpoise at 2SX is an exact shadow of the main aerial viz., a 5 wire cage "T" aerial, 133 feet long.. It is tuned by means of a tapped coil to the same L.C. value as the main aerial and is situated directly underneath at a height of 12 feet.

If you have not a wave meter it can be tuned approximately in the following manner.

1. Tune in to a station, using main aerial and earth. Note the setting on primary condenser for maximum volume.
2. Disconnect main aerial and join up counterpoise and earth.
3. Without varying primary condenser, alter the position of your tapped coil (c) until you get maximum volume again.

Of course it will not be as loud as your high aerial.

The diagram (Fig. 1 shows the layout. A is the aerial, B the receiver. C is a winding of about 40 turns of 22 gauge cotton covered wire wound on a 3 1/2 in. former. D is the counterpoise.

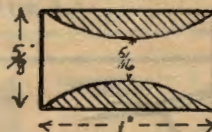
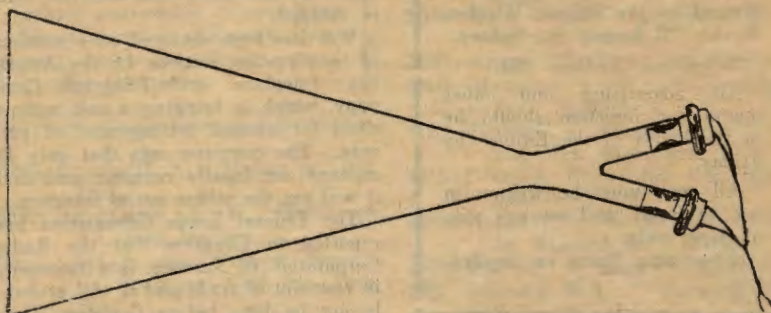


How to Improve Your Loud Speaker

In contributing the following, Mr. Howell states that he has been working up this idea for years, and that it will increase the volume and tonal qualities of any make of loud speaker.

In the narrow end of the horn insert a choke tube about 1 in. long that will fit snugly. A hole about 5/16 in. diameter is first bored in the tube. There must be a gradual taper from the centre to each end of the tube, and

no ridges to baffle sound. A good idea is to make the tube from a wax candle, experiment until best results are obtained, and then make it up from either wood or metal. The diagram will make the idea plain, and if any further explanation is required, Mr. Howell has a loud speaker incorporating this improvement at 19 Barlow Street, Sydney.



From Bega.

Here is a D.X list from C. P. Morgan, Bega, showing stations logged from 12th to 15th April.

2HM, 2UW, 2VI, 2AC, (N.Z.), 2CM, 2CDM, 2YI, 3BD, 2AL, 3JU, 2YG, 2JM, 2GR, 2FA, 5BQ, 3BU, 3BM, 3SE, 2IJ, 2BC, 2AQ, (N.Z.), 3QW, 1YA (N.Z.), 4YA (N.Z.), Wellington Broadcasters, N.Z., 3DP.

K.G.O. was picked up first on January 6th, and then on April 16th, 20th and 23rd. The receiver used is a three valve employing 1 stage radio detector and 1 stage audio.

On the night of the 27th, K.G.O. was held from 5 p.m. until 7 p.m. when he closed down. He was transmitting Henry Hollstead's Hotel, St. Francis Orchestra music from San Francisco and the reception at Bega was so clear that even the applause of the dancers was plainly audible.

Professor: "Define non-negotiable instruments and give an example."

Bright Student: "Paper that cannot be transferred, converted into cash, or used as a collateral, by endorsement; as, for instance, my rent receipts."— "Scotts."

BOOKS ON WIRELESS

Audel's Easy Lessons in Wireless Telegraphy, Price 3/9 posted.

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

Lessons in Wireless Telegraphy, by Morgan, price 2/3 posted.

The Construction of Wireless Receiving Apparatus, by P. Tyers, price 2/3 posted.

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All communications to be addressed to the Editor, Wireless Weekly, 33 Regent St., Sydney.

Telephone, Redfern 964.

All advertising and other matter for insertion should be in the hands of the Editor by Friday.

All copy must be written in ink or typed, and on one side of paper only.

Advertising Rates on application.

Rumpus in United States

That all is not as merry as the marriage bells in the radio world in U.S.A. is evidenced by advices just received here privately by an American business man.

The American Association of Authors, Composers and Publishers have started suit against the Los Angeles Times for broadcasting one of the Association's copyrighted songs, and a merry war is now going on. All the Los Angeles stations have agreed that they will not send out anything produced by the association until the suit is decided.

War has been declared on a number of broadcasting stations by the American Telephone and Telegraph Company, which is bringing a suit against them for alleged infringement of patents. The company says that only 45 stations are legally running, and that it will put the others out of business.

The Federal Trade Commission has reported to Congress that the Radio Corporation of America is a monopoly in restraint of trade and it will probably not be long before Congress starts on the warpath against them. According to the advices, there is a shortage of 301A tubes, the reason being that

the R.C.A. is planning to bring out some new kind of tube, and has created an artificial shortage so as to clean out the present stocks on hand.

The whole situation is somewhat of a mess, but it will get straightened out because the five million listeners will not permit anything to get the better of broadcasting.

U.S.A. Shows Btg Radio Figures

According to an American Radio business man now in Sydney, the public of the United States during the year 1923 spent £26,000,000 over the counters on radio apparatus. The expenditure for 1924 it is conservatively estimated will total 500,000,000 dollars. These figures are exclusive of export.

South America is the biggest radio customer of U.S.A., while Australia comes 6th on the list. The Crossley Company is enlarging its factory to enable it to increase its present output of 5000 receivers per day to 10,000. It seems that Radio is popular over there.

FOR SALE.—Complete crystal set; Loose Coupler, Western Electric phones, 2000 ohms, 7/20 stranded aerial wire, and insulators. £4/10/-



Radio Company

Limited

15 LOFTUS STREET

Circular Quay

SYDNEY



**THIS
WEEK**

VALVES :

WD 11	-	-	-	-	35/-
WD 12	-	-	-	-	35/-
UV 199	-	-	-	-	35/-
„ 299	-	-	-	-	35/-
„ 200	-	-	-	-	35/-

Giblin Remler Coils, all sizes from 4/11
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Advice given on any Standard Circuit.

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- 3AM—Dohrmann, G. S., 2 Hopetoun Ave., Canterbury.
- 3AP—Morris, R. D., Bealiba Rd., Caulfield.
- 3AY—Jenvy, W. W., 12 Lord St., East Caulfield.
- 3BC—Brighton Radio Club (R. P. Whalley), Wilson Hall, Brighton.
- 3BD—Cox, E. H., 5 Gibson St., Easternwick.
- 3BG—Osborne, L., Terang.
- 3BH—Whitelaw, C. R., Mooroolbark.
- 3BL—Fitchett, J. C., Salisbury St., Balwyn.
- 3BM—Love, H. K., "Lindum," Ferncroft Ave., East Malvern.
- 3BP—Hood, J. H., 6 Alexandra St., East St. Kilda.
- 3BQ—Hewden, W., Hill St., Box Hill.
- 3BU—Connelly, D. A., "Larnokk," Balaclava Rd., East St. Kilda.
- 3BY—Holst, H., 27 Bamba Rd., Caulfield.
- 3CB—Sievers, W. F., 30 Leaney St., East Richmond.
- 3CC—University of Melbourne, Melbourne.

- 3CH—Clarke, F. W., 165 Cardigan St., Carlton.
- 3DB—Hobart, Duff, 27 Westgarth St., East Malvern.
- 3DD—Osborne, L. F. G., "Louisville," Darling Rd., East Malvern.
- 3DF—Short, F. D., 2 Mozart St., St. Kilda.
- 3DL—Fells, L. C., North Rd., Caulfield.
- 3DM—Chambers and Co. (N. Culliver), 57 Simpson St., East Melbourne.

- 3EM—Doudney, H. W., Holy Trinity Vicarage, 7 Dickens St., Balaclava.
- 3EN—Leonard, A. B., Drouin.
- 3EP—Givens, J., 19 Logan St., Canterbury.
- 3ER—Rivers, E. R., St. Kinnord St., Essendon.
- 3FA—Abrahams, F., c/o Mrs. Solomons, Murphy St., Sth. Yarra.
- 3FH—Hall, R. F., Glindabourn Ave., Toorak.
- 3FM—Decrespigny, R. C., 20 Black St., Middle Brighton.
- 3GB—Glover, M. A., 24 Victoria Rd., Camberwell.
- 3GH—Hale, W. M., "Ben Nevis," Harvey St., Essendon.
- 3HE—Kruger, F., Camp St., Carlton.
- 3HH—Maughan, F. H., 15 Staniland Ave., Malvern.
- 3HQ—Good, E. J., "Rock Grove," Private Mail, Glenrowan.
- 3JD—Dane, J. E., Toorak Rd., Hawthorn.
- 3JH—Holland, F. H. J., "Cotswold," St. Kinnord St., Essendon.
- 3JP—Mitchell, H., Kean St., Caulfield.
- 3JR—Dunstan, W. J., 7 Cameron St., Ballarat East.

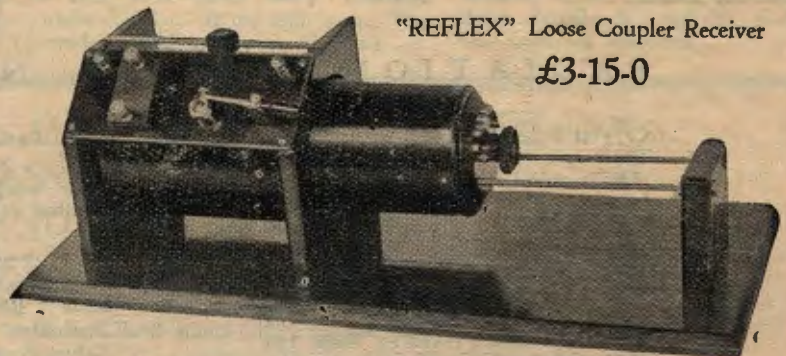
We regret very much that owing to unforeseen circumstances, Insulator was unable to contribute his usual article this week. However, the series will be carried on with next week.

- 3DV—Beattie, H. S., 1 Bishop St., Box Hill.
- 3DX—Van Cooth, J. R., Wattletree Rd., East Malvern.
- 3EC—Y.M.C.A. Am. Wireless Society, Cr. Short and High Sts., Bendigo.
- 3EL—Boyd, N. J., 100 Orrong Rd., Easternwick.

Continued on page 19

OUR SPECIAL
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2000 Ohms.
30/-



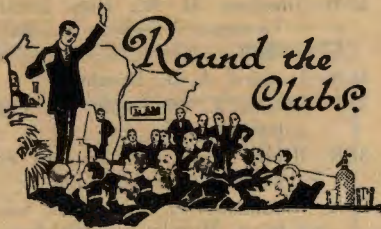
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Complete Set of Parts to make the above Set 36/6

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THE LEICHHARDT AND DISTRICT RADIO SOCIETY.

Members of the Leichhardt and District Radio Society, held their 78th general meeting at the club room, 176 Johnston St., Annandale, on Tuesday, April 29th. The attendance was excellent, and those present were treated to an excellent lecture by Mr. R. C. Caldwell, who dealt with the interesting subject of "Fading Signals." This lecture was a special one, delivered in addition to those set out on the syllabus, and Mr. R. C. Caldwell put forward some very interesting theories to account for the fading of radio signals.

After a number of questions had been answered, and a vote of thanks accorded the lecturer, the meeting was

addressed by Mr. Phil. Renshaw, Hon. Secretary of the N.S.W. Division of the Wireless Institute of Australia. Mr. Renshaw was given a very good reception, and spoke at length on the question of the amalgamation of all amateur wireless interests in this State. He also spoke of other matters relative to experimental activities, and, at the conclusion of his talk, was accorded a vote of thanks by acclamation.

On Tuesday night next the seventh lecture of the syllabus will be delivered by Mr. W. J. Zech, who will talk on "Batteries."

CAMPBIE AND DISTRICT RADIO CLUB.

A meeting of the above club was held in the club room, "Graven's Hall," Campsie, on Wednesday, 23rd April, at 8 p.m. After the minutes of the previous meeting had been read and confirmed, and correspondence read, Mr. A. E. Henry operated his excellent three valve receiver on the club's aerial.

A discussion on radio matters followed.

The next meeting will be held on Wednesday, 7th May, at 8 p.m.

STRATHFIELD AND DISTRICT RADIO CLUB.

The 6th general meeting of the club was held at the Secretary's Residence, on Thursday the 24th. of April, Mr. Rourke being in the chair.

The matter of the dance which the club is holding on the 22nd. of May, next at Strathfield Town Hall was gone into and all arrangements are now complete. Visitors from other clubs etc. will be assured of a very enjoyable night's entertainment.

This dance is the first of a series to be held during the winter months to raise funds for the clubs receiving set, and later the transmitter.

Details of the club's Silver Cup Competition for crystal sets are to hand but are not finalised yet.

The competition will be in the nature of a sealed handicap.

Two stations, one each end of the city will transmit during a session of two hours nightly for a period of one week. At the end of the week the logs of the reception together with the necessary declaration and circuit used will be submitted, when points will be

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R. C. A. Radio Frequency Transformers. Each 42/6
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Beston Variable Condensers, .0005.
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Each 3/6
W.D. 11 Adaptors. Each . . . 4/6
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"Fada" Rheostats. Each .. 4/-
V.T. Control Panels. Each .. 22/6
"Baby Brown" Loud Speakers.
Each £4/4/-
"Copperweld" Aerial Wire, 100ft.
Price 2/6
High-toned Buzzers. Each .. 4/9

DAVID JONES'

Radio Section, 252 York Street, Sydney

allotted from which the winner will be adjudged.

Entry forms will be available at the end of the week.

Entrance fee 1/- (one shilling).

All enquiries will be gladly answered by the Secretary, Mr. M. Wraxall "Almor," Long St., South Strathfield, where the club meets every Thursday night.

Send for entry form now.

Entries close 31st May, 1924.

HAMILTON EXPERIMENTAL WIRELESS CLUB.

The above is the title of the newly constituted organised body at Newcastle, which is entirely apart from the well-known Newcastle Radio Club.

The present membership is 33, and as anyone (including juveniles) genuinely interested in radio may become a member, a large influx is expected shortly.

A demonstration of radio was successfully given at the Wallsend Jubilee, in the presence of Messrs. Charlton, M.H.R., Cromarty, M.P., and Kilgour (Mayor of Newcastle), and many other prominent men, who were keenly interested. Messrs. F. A. Silverthorne (Hon. Sec.), M. Condie (President), and G. Field, were responsible for the success of the demonstration.

The club meets every Wednesday, at 7.30 p.m., at the Hamilton Mechanics' Institute. Prospective members are invited to attend.

CONCORD AMATEUR RADIO CLUB.

The above club held its usual weekly meeting at the club room, "Euripides," Wallace Street, Concord, on Thursday, 24th April, at 8 p.m., when a very interesting evening was spent by all present.

The attendance at this meeting was fair. Mr. Gray took the chair, and business was proceeded with briskly.

The correspondence was read and received. It was decided to co-operate with Marrickville and District Radio Society in its endeavours to secure experimental licenses under the new regulations.

The management committee held a meeting on Anzac Day, to discuss details of the construction of transmitter.

It was decided by the members to secure a few details from 2CM for the construction of same.

Mr. Smith then gave an interesting lecture on chemical rectifiers, a set of which will be constructed for club's transmitter. The members took keen interest in this lecture.

The usual half-hourly questions and answers period was then engaged upon.

After buzzer practice and listening in had been finished, refreshments were served to the members.

The meeting adjourned at 10 p.m. This club meets every Thursday night at 8 p.m., at the club room, "Euripides," Wallace Street, Concord. It

is hoped that the Concord amateurs have not forgotten that they have one of the oldest radio clubs in Australia. Experimenters, join up!

All communications should be addressed to W. H. Barker, "Euripides," Wallace Street, Concord.

A NEW TRAMWAY CLUB.

At a meeting, held at the Recreation Club, Rozelle Tramway Depot, on the 28th, it was unanimously decided, to form a sub-club of the Railway and Tramway Institute Wireless Society. A large membership is assured as already over 40 have signified their intention of joining the club. It is proposed, that classes be formed, and the committee draw up a syllabus for beginners, and that lectures, and demonstrators be invited to give members an insight into the various methods of reception, and the operation of different kinds of receivers. The club is fortunate in numbering several ex-commercial operators in its ranks, so the officers and members feel sanguine of having a very efficient club, and it hopes as time goes on, to form classes for the study of the higher branches of the science. All members of the R. and T. Institute are eligible for membership, and should get in touch with the Hon. Sec., who will be pleased to give all particulars. The Secretary, P. L. Nicholls, 233 Balmain Road, Leichhardt, will be glad to hear from all interested.

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The Moore Fund

In closing this fund, Wireless Weekly wants to convey its sincere thanks to those who have generously come forward and contributed towards the relief of Mrs. Moore.

Every penny of the money will be used for the benefit of Mrs. Moore and it should be made quite clear that there are no administrative or other expenses in connection with the fund. The trustees, Messrs. F. Basil Cooke, P. Renshaw and J. W. Robinson, will see that the amount is properly disbursed.

In the case of several of the clubs, the amount donated was largely due to the secretaries. In expressing our appreciation of their efforts and those of the other subscribers we find much additional gratification in the fact that they have been able to see further than the bald facts of the case, and to appreciate the extent of the tragedy which has fallen upon this little woman, left suddenly quite alone in the world, except for the two children for whom she has to care.

Contributions to date:

Proprietors Wireless Weekly	£5 0 0	C. Storm	0 15 0
United Distributing	10 10 0	H. Carter	0 5 0
Mr. Quaife	0 10 0	A. Larkin	1 0 0
Wireless Weekly Staff	1 3 6	E. Mason	0 5 0
P. Renshaw	3 3 0	N. Ambrose	0 3 0
Mr. Jones	0 10 6	J. G. Prichard	1 0 0
G. Taylor	1 1 0	Keith Davis	0 5 0
J. W. Robinson	1 1 0	C. Leaver	0 5 0
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J. Sandel	1 1 0	Campsie and District Radio Club	0 15 0
Mr. Allsop	0 10 6	A. E. Henry	0 5 0
Mr. Saunders	0 10 6	Charles Tripp	0 5 0
Robert H. Doyle	1 1 0	Wireless Branch (P.M.G. Department, Melbourne)	1 8 0
Miss Day	0 10 6	Illawarra Radio Club	0 10 0
A. F. Price	0 10 6	T. E. Dickenson	0 5 0
R. C. Marsden	1 1 0	Aust. Radio Relay League	£1 1 0
A. Dare	0 10 6	Goulburn & District Radio Club (Member)	4 0 0
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Wireless Institute	5 5 0	F. Lucas	0 2 6
J. Usher	0 5 0	Mr. Howell	0 10 6
D. T. Hinchin	5 0 0		
R. W. Faulkes	0 2 6		
A. Dixon	1 1 0		
J. Lendlaw	1 1 0		

New Plug Takes Many Phones

"Plug A Plug In a Plug" has come to be a Coast by word in radio circles since the introduction last month by the Kilbourne and Clark Mfg. Co., of their new type series automatic plug. With this plug attached to your head set it is possible to instantaneously add another pair of head phones to the circuit and as quickly detach them when desired without the usual bother of removing the plug from the jack and losing time, patience and temper with dinky phone tips. Demonstrations of the new plug at the National Radio Exposition at Los Angeles recently attracted considerable attention with the result that the K. and C. factory has been working day and night in this department keeping up with the demand.

Before buying that rheostat or potentiometer, examine the various types manufactured by the K. and C. Company... Your every need and convenience was considered when these were designed. There is a K. and C. rheostat with the proper resistance for every tube.

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Newcastle Radio Club	1 10 0
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F. Leverrier	10 10 0
H. Francis Markell	2 2 0
V. S. Liardet	0 1 0
Anonymous	0 10 6
Northbridge Radio Club	1 1 0
Strathfield and District Radio Club	0 12 0
Total	£111 1 0

"Say, Mabel, may I come over to-night?"
 "Sure, John, come on over."
 "Why, this is not John."
 "This isn't Mabel, either."—"Whirlwind."

Ethyl (who has just been operated upon for appendicitis): "Oh, doctor, do you think the scar will show?"
 Doctor (musingly): "It ought not to."—Judge.

WIRELESS APPARATUS

New or Second-hand,
Bought, Sold or Exchanged

HOWELL'S

19 Barlow Street

Continued from page 15

- 3JU—Hull, R. A., 38 Charnwood Rd., St. Kilda.
- 3JZ—Whalley, R. P., "Enmore," Bridge St., Sandringham.
- 3LM—Malvern District Branch Wireless Institute (E. J. Masters), 16 Sutherland Rd., Armadale.
- 3LQ—Downey, W. E., Hopkins House, Hopkins River, Warrnambool.
- 3LS—Busch, R. T., 30 Wordsworth St., Moonee Ponds.
- 3LW—Heam, C., 222 Carlisle St., St. Kilda.
- 3MP—Hosken, S. V., 42 Melville St., Hawthorne.
- 3NS—Norris and Skelley, 211 Elizabeth St., Melbourne.
- 3OK—Conry, W. H., 32 Irving Ave., Armadale.
- 3PO—Roberts, A. H., 103 Bent St., Northcote.
- 3QW—Muir, J. A., 10 Young St., Brighton.
- 3RF—Cordingley, C. H., 77 Bank St., East Ascot Vale.
- 3RG—Homberg, S. G., Waverley Rd., E. Malvern.
- 3RY—Wilson, W. A. G., 4 Webster St., Ballarat.
- 3SM—Gay, A. H. Warragul.
- 3SW—Gadsen, S. W., 5 Miller Grove, Kew.
- 3SX—Steane, G. W., Earle St., Mont Albert.
- 3TM—Buck, A. H., 750 Glenhuntly Rd., Glen Huntly.
- 3TU—Leckie, R. C., Bamfield St., Sandringham.
- 3UI—Dalton, R. M., San Mateo Ave., Mildura.
- 3VR—Abböt, R. N., "Fleur-de-lis," St. Elmo Ave., Alphington.
- 3VS—Philpott, O. J., 26 Lumeah Rd., Caulfield.
- 3XF—Chaffer, M., 41 Norwood Crescent, Moonee Ponds.
- 3XN—Leaney, W. G., 12 Henry St., Northcote.
- 3YW—Edgar, J. M., 12 Henry St., East Geelong.
- 3YY—Bush, A. M., 54 Brougham St., Bendigo.
- 3YZ—McKeown, A., 54 Yarra St., Alphington.
- 3ZA—Bardin, W. F., 226 Station St., North Carlton.
- 3ZB—Dixon, R. H., 1 Hopetoun Ave., Canterbury.
- 3ZC—Brock, H. E. E., 8 Ngarveno St., Moonee Ponds.
- 3ZD—Taylor, C. F., 133 High St., Kew.
- 3ZE—McGregor, K. W. A., 23 Molesworth St., Armadale.
- 3ZI—Barbour, K. H., 1 Irving Ave., Armadale.

- 3ZJ—Lempriere, C. L., Terrara Rd., Vermont.
- 3ZK—Bradley, P. R., Beach Crescent, Sandringham.
- 3ZL—New System Telephones, 25-27 Queen's Bridge St., Sth. Melbourne.
- 3ZM—Owen, C., 22 Kendall St., Sth. St. Kilda.
- 3ZN—Israel, M. S., 53 Blessington St., St. Kilda.
- 3ZO—Johnson, E. H., 105 Moorabool St., Geelong.
- 3ZP—George, H. A., 195 Ballarat Rd., Footscray.
- 3ZQ—Ballarat Radio Club (J. Matthews), Y.M.C.A., Ballarat.
- 3ZR—Snaith, S. L., 1 Byron St., Footscray.
- 3ZS—McMahon, G., Edinburgh St., Diamond Creek.
 No. 2430—Kells, A. C. E., 366 Ascot Vale, Moonee Ponds.

QUEENSLAND.

- 4CC—Stephen, A. N., Railway Parade, Clayfield, Brisbane.
- 4CK—Norris, E. L., Hume St., Toowoomba.
- 4GE—Fortescue, C., Arthur St., Toowoomba.
- 4GF—Fortescue, G., Arthur St., Toowoomba.
- No. 1217—Hobler, H. L., Lennox St., Rockhampton.

SOUTH AUSTRALIA.

- 5AI—Lloyd, H. K., 16 Trinity St., College Town.
- 5BI—S.A. School Mines and Industries (W. Homer), North Terrace, Adelaide.
- 5DN—Jones, L. C., 146 Rundle St., Adelaide.
- 5DO—St. Peter's College Radio Club (F. B. Oldfield), St. Peter's College, Adelaide.

WESTERN AUSTRALIA.

- 6AF—Silby, A., 38 Park St., North Perth.
- 6CZ—Saar, A., Grey St., Northam.
- 6DD—Bishop, C. E., Grey St., Northam.
- 6DY—Thomas, H., 26 Third Ave., Inglewood.
- 6DZ—Burrows, E. W., Station House, Eleanor St., Geraldton.
- 6WP—Phipps, W. R., 97 Rupert St., Subiaco.

TASMANIA.

- 7AL—Scanlon, W. L., 37 Hill St., West Hobart.
- 7BE—Stipek, J., St. Helen's Hotel, St. Helens.
- 7BN—Sheldrick, E. C., 59 West Tamar Rd., Launceston.

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A young man whose gallantry was in excess of his pecuniary means, sought to save the money required for the purchase of expensive flowers by arranging with a gardener to let him have a bouquet from time to time in return for his cast-off clothes.

One day he received a bunch of roses, which he at once dispatched to his lady-love. In sure anticipation of a friendly welcome, he called at the girl's house the same evening, and was a little surprised at a frosty reception.

After a pause the girl remarked, frigidly: "You sent me a note to-day?"

"A note! I? To be sure, I sent you flowers, but—"

"And this note was with the bouquet. Do you mean to deny it?"

And the young man read: "Don't forget the old tronsers you promised me the other day."—"Tit-Bits" (London).

Overheard: "The wife and I moved yesterday, and to-day I can't."—"Tepka Capital."

"Deacon White," said Parson Jackson, softly, "will you lead us in prayer?"

There was no answer.

"Deacon White," this time in a little louder voice, "will you lead?"

Still no response. Evidently the deacon was slumbering. Parson Jackson made a third appeal, and raised his voice to a high pitch that succeeded in arousing the drowsy man. "Deacon White, will you lead?"

The deacon, in bewilderment, rubbed his heavy eyes and blurted: "Lead yourself—I just dealt!"—"Disston's Crucible."

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East Crescent St., McMahon's Point.
for the proprietors and printers, Pub-
licity Press Ltd., 33/37 Regent St.,
Sydney.

Mike: "How would you like riding in a patrol waggon?"

Ike: "Oh, it might do in a pinch."

Dining with his bride at a continental hotel, a young Englishman was angered to find on his bill a charge of 10 francs for fruit. Calling the manager, he protested the item.

"Ah!" replied that worthy, pointing to a large dish upon the table, "but the fruit is there. It is not my fault you did not eat it."

The Englishman said no more, but on paying the bill he counted all but 10 francs, and seeing the look of inquiry on the manager's face, he remarked calmly, "That is for kissing my wife."

"Kissing your wife!" exclaimed the other aghast. "But I have not kissed your wife."

"No," said the Englishman, "but she was there, wasn't she? It is not my fault if you did not want to kiss her."—Scoots.

Wedding announcements (if they were truthful): Mr. and Mrs. Josiah H. Plunk are very glad to announce that at last their daughter, Miss Harriet Beulah Plunk, has caught Mr. Robert V. Bondes in her hairnet, and that these will be married February 16, 1924, at the Little Church near the Coroner. It is hoped by this alliance the family finances will be greatly strengthened. Please send a gift, and one other than a chafing dish, as she has four already.—"Book of Smiles."

"It's hard," said the sentimental landlady at the diner table, "to think that this poor little lamb should be destroyed in its youth just to satisfy our appetites."

"Yes," replied the smart lodger, struggling with his portion, "it is tough."—"Book of Smiles."

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U.V. 199 G. 299 D.V.I.
OSRAM D.E. 3 B.T.H.
B. 5, etc.

12/6 each

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31½ volts and 42 volts

9/6 to 12/6 each

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If any difficulty in obtaining supplies write us.



This illustrates the new Radio High-tension "B" Battery, which can be obtained in either 31½ or 42 volts, with intermediate tappings.

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"	"	199	35/-
"	"	WD 11	35/-
"	"	WD 12	35/-
Jefferson 41	Audio Transformers		35/-
"	Star	"	27/6
Nutmeg	"	"	30/-
Atlas	Loud Speakers		£7/15/-
Nutmeg	3000 ohms. Head Set		£2/10/-
Single Band	Phones		18/6

Complete stocks of all parts for Amateur Construction. Send in your name and address to be added to our mailing list and we will advise you regularly of the arrival of new parts and any alteration in prices to our regular list R4.

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