

# WIRELESS WEEKLY

Registered at the G.P.O., Sydney, for transmission by post as a newspaper.


FRIDAY, AUGUST 8, 1924. Vol. 4. No. 17.

## 3D

TO THE LADIES

*You can enjoy Broadcasting in comfort if your Radio Set is equipped with*

### New System True Music Handsets



*Obtainable from all Radio Dealers or write*  
**NEW SYSTEM TELEPHONES**  
PROPRIETARY LTD.  
25-27 Queens Bridge St.,  
MELBOURNE  
and  
280 Castlereagh Street,  
SYDNEY

*Price - £2 15s.*  
4000 ohms.

#### CONTENTS

High Losses Amongst  
Wireless Experimenters  
—  
A Three Coil Standard  
Regenerative Receiver  
—  
A Power Transformer  
—  
Victorian Notes  
Briny Reminiscences

Friday, August 8, 1924.

WIRELESS WEEKLY

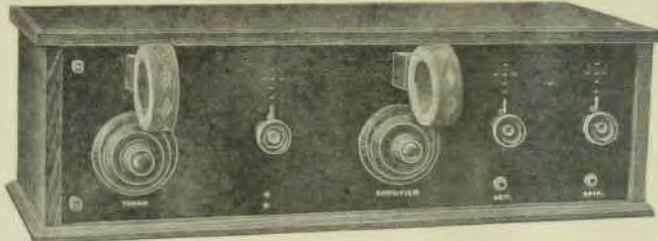
## SIGNAL Home Assembly Sets



Model Phone Valve, £5/10/-



Model Q, 2 Valves, £9/9/-  
Model R three Valves (Audio Freq.), £11/11/-



Model T, 4 Valves (Radio Freq.)  
£11/11/-

Model S, 3 Valves (Radio Freq.)  
£13/13/-

### *Make It Yourself*

**T**HE SIGNAL HOME ASSEMBLY SETS are designed to meet all demands for complete sets ready to be assembled. Simply constructed, and yet efficient. Each set contains all the parts necessary to construct the set proper. All contained in an attractive oak cabinet, mission finish, with engraved Bakelite panel all bored ready for mounting the parts.

INSTRUCTIONS and a clear diagram make it very easy to assemble these sets.

BOYS, YOUNG and OLD, here you can get all the thrill and satisfaction of MAKING YOUR OWN, and SAVE HALF THE COST

ASK YOUR DEALER FOR "SIGNAL"

and if he has not yet stocked it write us

## United Distributors Limited

28 Clarence-st., Sydney

(WHOLESALE)

592 Bourke-st., Melbourne

**VOLMAX**  
**THE MARK OF QUALITY**

**WIRELESS SUPPLIES LTD.**  
21 ROYAL ARCADE, SYDNEY.

Beg to announce that they are opening a new Branch Store at 329 GEORGE ST., SYDNEY, opposite Equitable Buildings, about August 11, where the same standard of Service and Quality of goods will be maintained.

**TRIMM PHONES**

“Dependable” 2400 ohms . . . . . 32/6  
“Professional” 3000 ohms . . . . . 45/-

**WIRELESS SUPPLIES LTD.**  
21 ROYAL ARCADE & 1329 GEORGE STREET, SYDNEY  
PHONE M3378

### WIRELESS BROADCASTING

has bridged the miles between City and Country

BUT IT IS NECESSARY TO HAVE AN EFFICIENT RECEIVER TO COLLECT THE BROADCAST MATTER AND TO REPRODUCE IT WITHOUT DISTORTION *That Instrument is . . .*

**'BURGINPHONE'** *and it is Australian-made*

To the health and independence of farm or country life, a "BURGINPHONE" adds the large city's most envied advantage—access to wholesome, inspiring entertainment. A "Burginphone," the reproducer supreme, brings out all that is finest and best in broadcast programmes—clearness, fidelity to the original, and above all, sufficient power to be enjoyed by the entire family and their guests.

Illustrated Catalogue and Price List on Application.

*"Service and Quality"*

*"Service and Quality"*

## BURGIN ELECTRIC CO.

MANUFACTURERS AND SUPPLIERS OF HIGH-GRADE WIRELESS APPARATUS  
1st FLOOR, CALLAGHAN HOUSE, 391 GEORGE STREET, SYDNEY  
OPPOSITE HORDERN BROTHERS GEO. ST.

Tel. M 3069

Telegrams, "Burginco, Sydney"

LOOK INSIDE

EVERY TAPE STAMPED



## THIS IS THE BRAND

to look for when you require proper cylinders for your Crystal Set.



"Grodan" Tubes are specially manufactured for discriminating buyers. Each layer of paper is impregnated with insulating material which insures maximum capacity.

Absolutely no leakage.

Accept no other.

GROSE & DANIELL, 185A GEORGE ST. WEST., SYDNEY

# OPEN!

Corner BARLOW & PITT STREETS  
An Aerial's Length from the Central Railway Station

Terminii of all Bus, Rail and Tram Services. Convenient  
to all Residents of Western, Southern and Northern Lines.

Large stocks of Quality Wireless Apparatus. Parts,  
Aerial Equipment, and complete Crystal and Valve  
Broadcast Receivers for all services are available at  
reasonable prices.

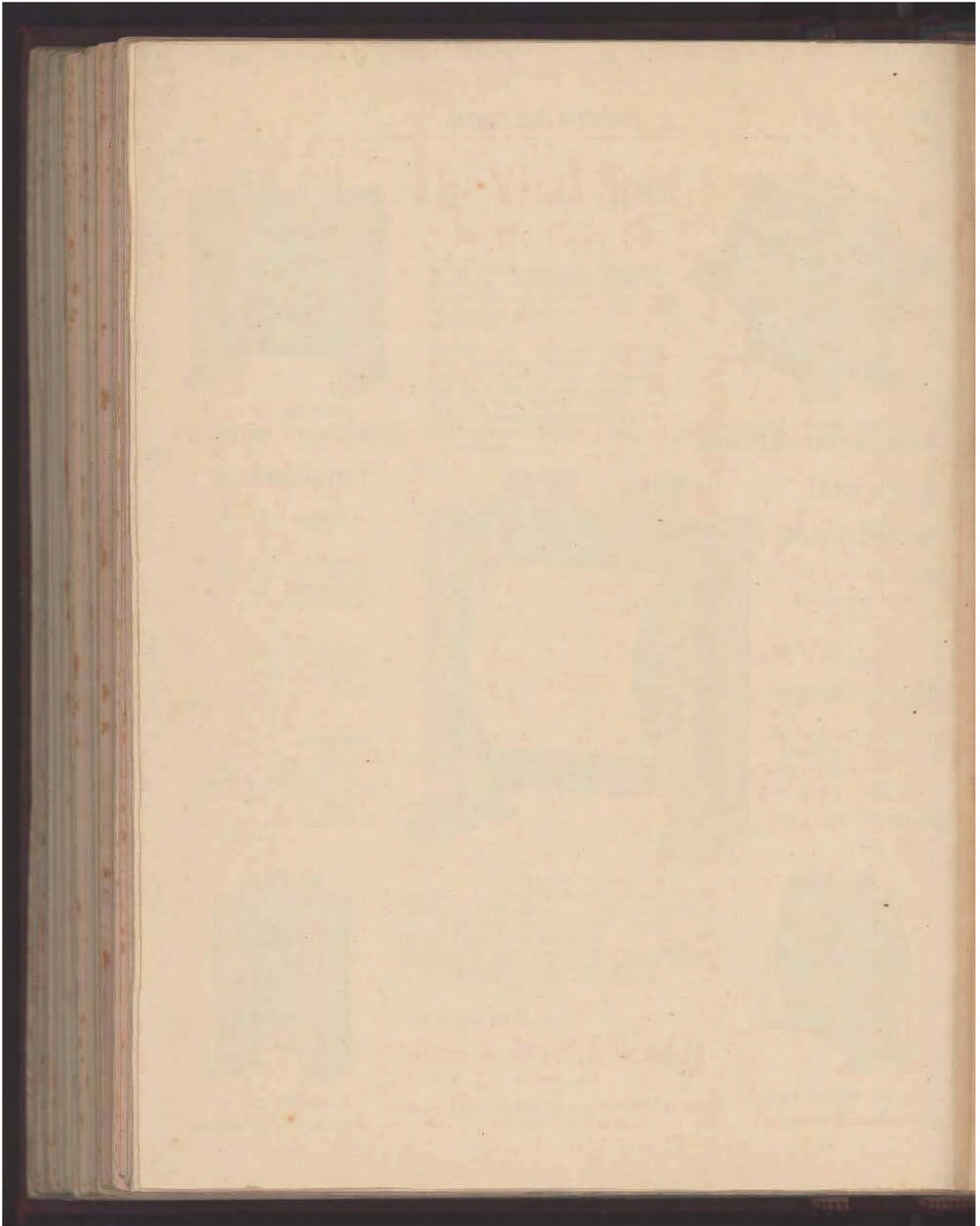
All articles purchased from us have our guarantee of  
Efficiency.

Call and Inspect our wonderful display.

## RAILWAY RADIO Co.

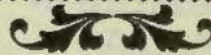
Terminii of all Bus Services

——Rail and Tram——





# "HOMOPHONE SETS."



### HOMOPHONE SET "A"

is a ONE VALVE SET designed for Head Phones only, and will cover all wave lengths. Normally this set will receive broadcasting up to 150 miles. It has been known to exceed this range under perfect conditions. Fitted in polished wood cabinet, complete with Batteries, Head Phones, Valve and Aerial Material. Price . . . . . £13/10/-

### HOMOPHONE SET "B"

is a TWO VALVE REFLEX equal to 3 Valve of any other design, and has been tested and proved satisfactory in districts up to 300 Miles, and will work a loud speaker with great success on local broadcasting. Fitted in polished wood cabinet complete with Batteries, Valves, Head Phones and Aerial Material. Price . . . . . £26/0/0.

### HOMOPHONE SET "C"

is a THREE VALVE REFLEX equal to 5 Valve of any other design. It is a wonderful Radio Achievement and with the original tests made at Bourke, 500 Miles from Sydney, this year, successfully worked a Loud Speaker with good volume at Bradstreet Hotel, Bourke. Fitted in polished wood cabinet complete with Batteries, Valves, Head Phones and Aerial Material. Price £35/0/0.

### HOMOPHONE SET "D"

is a THREE VALVE SET designed for long distance phone reception comprising 1 stage Radio Frequency Amplification, Detector and 1 stage Audio Amplification. With this set it is possible to listen in to American broadcasting stations. Fitted in polished wood cabinet complete with Batteries, Valves, Head Phones and Aerial Material . . . . . Price £35/10/-

### HOMOPHONE SET "E"

is a FOUR VALVE SET constructed for long distance Loud Speaker reception. It consists of 1 stage Radio Frequency Amplification, Detector, with 2 stages of Audio Amplification and should operate at a range of 600 miles. Complete in polished wood cabinet, with Valves, Head Phones, Batteries, and Aerial Material . . . . . Price £43/15/-

### HOMOPHONE SET "F"

is a FOUR VALVE SET designed for extra long distance, Head Phone reception, constructed with 2 stages Radio Frequency Amplification, Detector and 1 stage Audio Amplification. Fitted in polished wood cabinet, with Head Phones, Batteries, Valves and Aerial Material complete. Price . . . . . £43/15/-

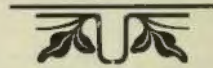


**THE HOME ELECTRIC**  
106a. KING STREET, SYDNEY.  
'Phone B5565.



## ANNOUNCEMENT!

PITT, VICKERY, LTD., the well-known Electric Supply Store has opened an up-to-date Radio Department. A large shipment of all the best known Radio Parts has just arrived, also large stocks of all makes of Crystal and Valve Sets. Call and Inspect.



# PITT, VICKERY LTD.

335, 337 PITT STREET, SYDNEY.

Telephone: City 6053,  
8073.



## Why Not Build a Loose Coupler?

We can supply you with a Complete Set of Loose Coupler Parts, including Detector, Wooden Ends, N.P. Slider, Rods, and Bakelite Strip, etc., for 27/6  
A Single Valve Amplifier, suitable for the above Set, may be constructed for—

Thordarson Audio Frequency Trans-		"A" Battery, 1.5 Volts	3 0
former	£1 3 0	Valve, WD12	1 15 0
Valve Holder	1 6	Panel, 6 x 8 Bakelite	3 0
Rheostat	3 6	8 Terminals, N.P.	2 8
"B" Battery, 1/6-1 Volts	12 6		£4 6 2

LET US SHOW YOU HOW TO LISTEN TO AMERICAN BROADCASTING.

## THE UNIVERSAL ELECTRIC COMPANY

108 MARKET ST.

"Where your money goes the furthest."

M 3411

### THIS BOOK

Post 6d. Paid

- 132 Pages
- 400 Illustrations
- 50 Radio Diagrams



Catalogue and valuable information on  
 WIRELESS MODEL ENGINEERING,  
 ELECTRICITY, TELEPHONY, FRET-  
 WORK, MODEL AEROPLANES, ETC.  
 Covers complete field of ELECTRICAL AND  
 MECHANICAL HOBBIES  
 Apparatus required is illustrated and its use  
 fully explained.  
 The Radio Section is exceptionally complete,  
 containing over 50 circuit diagrams.

Send in 6s. STAMPS  
**Homecrafts**  
 211 Swanston Street,  
 (P.H. McELROY), MELBOURNE

## Stop, Look and Listen

### IN WITH OUR CRYSTAL SET

Complete Parts of a Crystal Set, with Head Phones and Aerial Material, 44/-.

Valve Sets, complete with Phones and all necessary material, from 28.

## SLINGSBY & COLES

Licensed Radio Dealer.  
 1 YORK STREET, SYDNEY.  
 Telephone B-4149      Opposite the Wentworth Hotel

THERE ARE MANY COMPONENTS  
 NECESSARY TO BUILD A SATISFAC-  
 TORY RADIO SET

WE HAVE ALL YOU NEED!

New Stocks arriving each mail. Our phones include  
 Western Electric at 44/-; Trimm's Dependable, 32/6;  
 Sterling's 4000 ohm, 44/-; Harrington "Imperia" 4000  
 ohms, 35/-; Pico, 2200 ohms, 25/-.



PHILIPS' VALVES D L, II, IV., and V., 18/6      ADIOTRONS — EDISWANS  
 . . . AND ALL STANDARD TYPES. . .

HAVE YOU TRIED OUR CRYSTAL SET — THE BEST THERE IS!  
 Visit our Demonstration Hall and listen to perfect reception on the "Imperia"  
 Broadcast Receiver.

**Harringtons** LTD

386 George Street, Sydney

MELBOURNE: 266 Collins Street.  
 KATOOMBA: Katoomba Street.  
 BRISBANE: 93 Queen Street.  
 ADELAIDE: 10 Rundle Street.  
 WELLINGTON, N.Z.: 42 Willis Street.  
 AUCKLAND, N.Z.: 140 Queen Street.

Before you  
 Expend  
 Money on  
 Radio  
 Equipment  
 Consult  
 Anthony  
 Horderns'  
 Wireless  
 Experts.

Your inspec-  
 tion of the  
 big display  
 of  
 everything  
 that is new  
 in the world  
 of Wireless,  
 is invited.

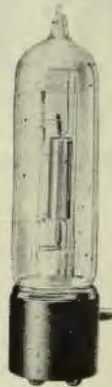
(Wireless -- Second  
 Floor)

Anthony Hordern & Sons  
 Limited,

Brickfield Hill, Sydney

Phone City 9460. Box 2713 G.P.O.

## A New Valve that saves you Money



Numerous Radio enthusiasts in Australia have for some time heard of the wonderful results and economy of the

### WECOVALVE

Western Electric Co. (Aust.) Ltd., having completed their arrangements for the supply of these valves throughout Australia desire to inform the public that Wecovalves are obtainable from their regular radio dealer. The Wecovalve stands in a class by itself.

#### IT IS ENTIRELY FREE FROM MICROPHONIC NOISES.

The world renowned oxide coated filament as used in the manufacture of the most expensive Western Electric valves is also employed in the construction of the Wecovalve, thereby ensuring a phenomenally long life and an efficiency equal to the very best of high temperature valves.

It is essentially an all-purpose valve and can be used either as a detector or amplifier. A single dry cell only is required for filament heating.

Suitable sockets to mount Wecovalves are available, or adaptors can be supplied which enables you to fit them to any standard British socket.

Further particulars from your regular radio dealer or direct from:

**Western Electric Company  
 (Australia) Ltd.**

192-194 CASTLEREAGH STREET, SYDNEY.

Phones: City 356 and 366.

Two travelling salesmen, bound for the Pacific Coast, sat facing each other at a table in the diner of a Union Pacific train.

After gazing intently at each other

for a while, one said to the other in a low tone:

"Klux?"

"No, no," was the reply; "Cluks and Suits."—*"Forbes Magazine."*

*For Satisfaction*

# SMITH'S

Let us help you build your own. It is a simple matter if you have the proper instruction.

Let us advise you :

Base Boards . . . . .	2/6	Valve Sockets, R Type . . . . .	2/6
Loose Coupler Ends, Set of 4 . . . . .	2/6	Valve Sockets, Radiotron Type . . . . .	4/6
Contact Stops, N.P., per doz. . . . .	1/-	Jefferson Transformers, No. 41 . . . . .	30/-
Contact Studs, N.P., per doz. . . . .	1/-	Jefferson Transformers, Star . . . . .	25/-
Runner Rods, nickelled . . . . .	1/2	Murdoch 3000 Head Phones . . . . .	30/-
Sliding Contacts, brass . . . . .	1/6	Winding Wires, all sizes in stock	
Sliding Contacts, N.P. and Rod . . . . .	2/6	Aerial Wire, Copperweld . . . . . 100ft.,	4/-
Crystal Detectors, Mounted . . . . .	3/8	43 Variable Condensers . . . . .	18/6
Crystal Detectors, N.P., unassembled . . . . .	2/11	Primary Tubes Wound . . . . .	3/6
Crystal Detectors, glass enclosed, mounted, 5/6		Secondary Tubes, Wound and Tapped . . . . .	6/-
Crystal Detectors, glass enclosed, unmounted, 4/2.			

Write for Catalogue.

Bakelite cut and drilled to order.

*FREE ADVICE ON BUILDING YOUR SET.*

## SMITH'S RADIO STORES

3 VICTORIA ARCADE,

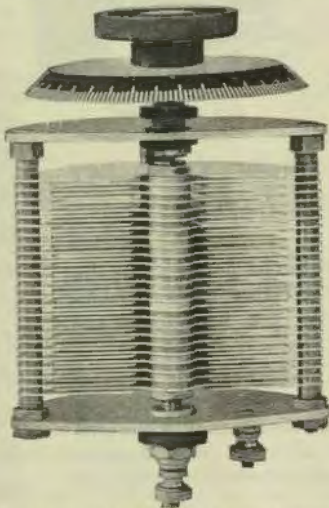
OPP. HOTEL AUSTRALIA.

*Within Reach of All*

QUALITY WITH LOW PRICES

**LOUIS COEN WIRELESS PTY. LTD.**

63 SWANSTON STREET, MELBOURNE



ORMOND VARIABLE CONDENSERS

.001 .....	14/-
.0005 .....	10/6
.0003 .....	10/-
.0002 .....	9/-
Complete with Knob and dial.	

Insulators, Egg Type small . . . . 2½d. each  
 Lead In Tubes—Ebonite with brass rod enclosed and terminals—9 inches long 1/9; 15 inches long 3/3; 18 inches long 4/-.  
 Dry Cells, No. 6 Voltage 1½ . . . . 2/6  
 B Batteries.  
 Hellecons tapped with wander plugs. 60  
 volt, 12/-; 45 volt, 13/6; 36 volt, 11/6.  
 Crystals—Nudite, Hertzite and others as shipments allow . . . . . 1/6



Fixed Condensers as illustrated Ebonite with mica dielectric. .001, .002 .0005, .0002

1/8

Crystal Detectors.

Glass barrel type mounted on Ebonite  
 Vertical . . . . . 3/6  
 Horizontal . . . . . 3/-  
 Buzzers—Nickel plated high tone . . . 4/3  
 Ebonite cut to any size in 1/8, 3/16, 1/4 and 3/8 thickness . . . . . 5/6 lb.

Valve Sockets.

English Standard . . . . . 1/- & 1/8  
 American Standard . . . . . 2/6  
 Well finished bakelite with terminals marked . . . . . 3/-

Two Coil Holders.

with cam vernier adjustment . . 16/-

Switches.

Single pole Double Throw mounted on Ebonite 10 Amps. . . . . 4/6  
 Double Pole Double Throw mounted on Ebonite 10 Amps. . . . . 5/9

Terminals.

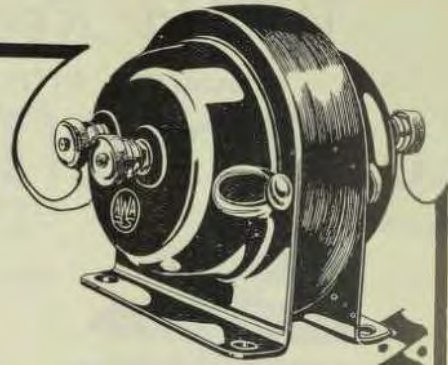
All shapes and styles—Ebonite or brass 2½d and 3d.

MAIL ORDERS OVER £1 POST FREE.

WRITE FOR FREE PRICE LIST.

COMPLETE SATISFACTION GUARANTEED.

# Amplification Without Distortion



## *A.W.A. Audio Frequency Transformer*

Perfect reception depends upon the efficacy of the transformer to faithfully build up the low frequency oscillations.

The A.W.A. Transformer is a special purpose transformer, particularly suitable for the most complex circuits, and giving uniform amplification over the widest possible range of frequencies.

It will handle maximum volume for loud speakers with clear, pure and distortionless tone.

*Procurable from  
all Radio Dealers.*



**Amalgamated  Wireless**  
*(Australasia) Ltd.*

Clarence Street  
Sydney

Collins Street  
Melbourne

Radio Dealers kindly write for Trade Price List.



OFFICIAL ORGAN OF THE WIRELESS INSTITUTE OF AUSTRALIA (N.S.W. Division)

Vol. 4.

Friday, August 8, 1924.

No. 17.

## YOU CAN HELP



WITH the advent of the new regulations, Australia has entered upon a Broadcasting boom. Birth has been given to a new Industry which, granted a fair chance and under wise guidance, will develop into a steady and big business providing employment for hundreds of Australians.

Side by side with Experimenters, a young and ever growing army of Broadcast listeners is coming into existence—beginners in wireless, eager to learn, and quick to respond to the well meant advice of those whom we may call the "old timers."

To experimenters therefore, we want to say this. It is to you that the beginner will turn for assistance; so when your advice is asked for, give of your very best. Just forget for a while that you have had months or years of experience and remember that once in the dim past you yourself were a tenderfoot.

The beginner is tackling something entirely new to him and he may very easily make a mistake

that will not only prove financially unfortunate but may quite possibly have a fatal effect upon his first impressions of wireless.

Therefore experimenters, out of the knowledge you have gained, go out of your way to put him on the right track. If he is building his own set, give him a circuit which you know he can handle without causing interference. Explain to him the reason why he should put in a stage of Radio, or one of Audio, and how many valves will work a Loud Speaker. Go into his problems with him and help him in just the way you yourself needed helping when you started out on your Loose coupler.

The good that you can do in this direction will have a twofold effect. It will play a not unimportant part in the building up of a great Australian Industry and it will demonstrate that the Experimenters are ready and willing to impart to others the fruits of their long hours of patient research and Experimentation in the science of wireless.

### Roster for Week ending 13th August, 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, Aug. 7	2 RA 2 GR	2 IJ 2 JM	2 YI	2 UW	2 YG 2 VM	2 ZG
Friday, .... 8	2 IJ 2 GR	"	"	ZN	" 2 ZZ	"
Saturday, . 9	2 RA 2 GR	2 IJ	"	"	"	"
Sunday, . 10	2 RA 2 GR	"	"	"	"	"
Mon., ..... 11	2 RA 2 GR	2 IJ	"	"	"	"
Tues., .. 12	2 IJ	"	"	"	"	"
Wednes., .. 13	2 RA 2 GR	2 IJ	"	"	"	"

From 6.55 p.m. until 7 p.m. every Saturday and Sunday, time Signals are sent by 2MU on a wave-length of 200 metres

periment" to death. It is not that they lack the ability to go further, but simply that each one develops a fad, and accordingly takes the line of least resistance.

This would be quite in order if the different specialities were wide enough apart; if all, or at least a greater number of the many phases of radio, were receiving their due share of experimentation. The trouble, however, is that this is far from being the case. There is a limited number which is being "done to death," and the result, so far as these phases are concerned, is not commensurate with the energy which is being expended upon them. They are worn out, at least for the immediate present.

Now, the consequence of this is that, all over the world, a huge amount of energy is being wasted—not completely wasted, it is true, but, at the very least, energy which could be far more usefully employed in other ways. The system, in a word, has high losses. It is inefficient.

And the remedy? Obviously to organise experimenters so that there would be as little duplicating as possible; to pull the one-idea experimenters from the rut into which they have unconsciously drifted, and the emphasising of those phases which, from the point of view of progress, would be more prolific. A big undertaking, it is true, but one that would be worth the time and trouble. And from all appearances, too, such an outlook would take a large amount of enforcing, for the experimental community, in spite of anything that may be said to the contrary, is a slow-thinking and conservative body. The statement, for instance, from America that half a million dollars would be given for a successful static eliminator did not throw many experimenters into a flutter of excitement, as naturally might be expected. Yet, although at present such a boon seems hopeless (everything does until somebody at last invents it), what greater field and what greater prize could be offered than this?

Exactly what lines of experiment should be tackled secretly comes within the scope of this article; that—the static eliminator—is as typical an instance as any, and there are dozens of others. And the detail of such organization cannot be mentioned here; sufficient that its need be recorded—and in proof that it is no idealistic, im-

practicable fancy, the radio "Check-up" held a short time ago in America to endeavour to find some of the causes of fading, which entailed a country-wide organisation, can be instanced. This is a move towards a low-loss radio community. And when this fact is grasped there'll be no means from those whose ideas are so fixed that a law allowing energised aeriols arouses loud protests. No more striking instance of narrow conservatism could be provided than this. The idea of the possibility of devising some means of overcoming the little interference which reaction does cause evidently was too striking and original to occur to these "experimenters"; there was no course but that of least resistance, which consisted of following the old precepts and eliminating the chance of interference.

As soon as wireless experimenters realise that the harder the fight the greater the reward, radio will make quicker progress.



Kingfisher Street,  
Longreach, Central Q'land,  
July 21st, 1924.

To The Editor "Wireless Weekly,"  
33 Regent Street,  
Sydney, N.S.W.

Sir,—

Seeing in the recent issues of your most valuable paper small paragraphs relating to the number of stations logged by experimenters, the following would perhaps be of interest to you.

During the last week I have logged the following on one valve:

EXPERIMENTAL STATIONS.  
2HM Marshall, Armidale, N.S.W., Morse and speech, (on two valves this station is audible all over the room which is ten feet square) 2LO, 2GR, 2CM, 2CR, 4BF, 2YI, 2DS, 2VM, 2JM, 2RA, 2IJ, 2YG, 4CK, 4CM, 5AI, 3BD, 2MU, 2OI, 5BF. The majority were received on speech as well as Morse.

The following Government stations were heard during June:—  
VIT, VIC, VIB, VII, VIR, VIA,

VIM, VIH, VKQ, VIN, VIO, VIW, VIE.

The following ships have been heard during the last three months:—CGT, Melusia; GBE, Niagara (this ship was logged three days out from Vancouver); GBFV, Arafura; VHO, Canberra; VHU, Mataram; VIIW, Wvandra; VIK, Time; GDJC, Montoro; GJLW, Nauru Chief; VIQ, Buninyong; VJA, Riverina; VJE, Cooma; VJR, Boonah; VHB, Leuka; VHC, Iron Prince; VLE, Maheno; VLS, Ngaito; VNW, Wongsella; VXA, Onah; VHK, Wodonga; VZBK, Age; VZBW, Hobsons Bay; VZDK, Jervis Bay; VHF, Bombala.

The following Long Wave Stations were logged:—VLA, Awanui; NPO, Cavite Manila; PKX, Malahang; PKC, Sitoebondor; PCG, unknown; PKD, Koepang.

2BL Broadcasters Sydney Ltd., are audible all over room on two valves. 2FC Farmers Sydney, are not half as loud as 2BL.

I can produce witnesses to verify the above report if necessary, including reception of Morse stations.

I remain,

Yours truly,

WILLIAM E. HAGARTY.

#### WIRELESS OPERATOR'S BRAVERY

The steamer, City of Adelaide, recently put into Hobart after weathering cyclonic gales on the passage across from Dunedin.

The Captain states that in a large measure the safety of the vessel was attributed to the bravery of the senior wireless operator, who climbed aloft in the teeth of a roaring gale to repair the ship's aerial, thus restoring communication as a guard against eventualities. Episodes such as this emphasise the value of wireless in an extremity. Although in this instance no S.O.S. was necessary, wireless has in many cases been the means of succour in marine disasters.

#### WIRELESS CABIN OVERBOARD.

A wireless operator on the steamer Maid of Corfu had a remarkable experience during a terrific hurricane off the Argentine coast recently. momentous seas swept the vessel's deck, and the wireless cabin was torn from its stanchion and, with the operator inside, carried overboard. Imagining that his cabin had been flooded,

(Continued on Page 30, Col. 3.)



## HIGH LOSSES AMONGST WIRELESS EXPERIMENTERS.

By Alan Burrows.

The quality of never being satisfied amounts almost to genius in some people; and amateurs appear to own their full share, with, perhaps, a little thrown in, of this dissatisfaction which makes itself apparent in so many ways. The latest instance comes from Victoria, where some discontented members of the Wireless Institute of Australia uttered a growl concerning the fact that the recently-issued regulations allowed full regeneration, or back-coupling.

Now, the assumption is that these people would object if re-tuning were entirely prohibited, or, indeed, if they were given full permission to do anything at all which they wished. There would have been a far greater outcry from experimenters if back-coupling had had any restrictions at all placed upon it; yet, as it was, these Victorians (who probably represented only a small proportion of the Victorian men) evidently thought a complaint would not be out of place.

Everybody knows, of course, that a set with re-tuning, unless handled by someone who doesn't deserve to own an outfit, is practically harmless, with the exception, perhaps, of the notorious P.I., which, since transmitters are not being referred to, can scarcely be taken into account in this case. Furthermore, the experimenter who wishes to bind himself and his neighbours down to a conservative arrangement such as any prohibition on regeneration is not worthy of the name which he carries, nor does he realise the worth of the privilege which has been granted to him. The essential meaning of experiment is to discover or invent—in any case, to make some attempt to do so. This means progress, and to make unlawful the use of one of the biggest steps in modern radio would not mean progress.

This, then, gives rise to the question: What nowadays constitutes progress? Assuredly not mere DX reception, for even now the earth has been girdled with wireless, and the amateur's scope in this direction is fast reaching its limit. Nor is it records on low-power, for this

is equivalent to pushing a bicycle up a gentle grade, when a far more useful end, at the cost of very little more energy, would be gained by riding it. And there are a number of other objectives which seem equally aimless and futile, comparatively speaking.

Yet it is true that the vast majority of experimenters give their time and energy to long-distance work, which, when once it is achieved, gets no further; to reaching out on low power when the chap two suburbs away is trying to conduct reliable work with another nearby station in the face, very probably, of severe interference by the low-power long-distance chap. And more often than not the local worker is doing something which is actually more useful and worth while than the other.

These, of course, are only a few instances. There are innumerable examples of misdirected paths into which the average amateur throws himself, which so often show themselves in the end as blind-alleys. The endless rearrangement of panels; the different tuning devices, none of which is better than the other—some are beginning now to have doubts of the superiority of the acknowledged honeycomb coil over the loose coupler; circuits such as the reflex, which, while undoubtedly novel and clever, are seldom as efficient as the straight-out set—all are instances of energy which could be more usefully applied.

It is argued, then, that all these are simply experiments that, while getting nowhere in themselves, help the gradual march onwards—the inevitable defects and failures which mark the course of any science. Which is quite true, so far as it goes; but it doesn't go far enough. There are definite lines of experiment which are more worth while than others. Some (say, for example, the principle of tuning), when once they reach a certain point, can go no farther, and even if they did little would be gained. When once a loose coupler or the newer honeycomb coil tunes a set efficiently, of what gain is it to continue research in that direction when there are

hundreds of other and wider avenues to explore?

Then, of course, there arises the contention that an amateur experiments for pleasure, and is quite at liberty to follow the dictates of his own inclination. This, of course, is an unanswerable argument; but it has the advantage that no "genuine experimenter"—one who calls himself an "asset to his country"—would use it if his real aim were progress. Only research which lured him somewhere would interest him.

Now, all this need not by any means detract from the value of a broad, comprehensive style of investigation; it does not follow that this line of argument condemns experiment on general lines. Nothing, of course, is so perfect that it cannot be bettered; nor has anything yet been made by man which does not warrant improvement. But this contention, which is shared by more than a few amateurs, does mean that there are certain ends which, if aimed at with a moderate amount of consistency and steadfastness, will yield better and more worth while results than others. There are paths which have been more thoroughly explored than some, and which, very often, are more worthy of attention than those which for any reason are so well investigated.

Wireless research, like everything else, appears to run in grooves. Some men, so long as they are in these grooves, display the utmost originality—if this doesn't seem a contradictory way of putting it—and, within these limits, they make great progress, but to look over the edge of their own particular rut never seems to occur to them. They plug on and on patiently, making, perchance, astounding DX records; designing amazing circuits haphazardly—none being better than the last—not that they expect them to be, and inventing marvellous methods of tuning, knowing in their own hearts that the standard methods are best.

The reason of this is probably that these one-way experimenters are more familiar with their certain speciality, which they naturally "ex-

READ PARTICULARS OF THE NEW FROST LINES ON PAGES 4 & 5.

## A THREE COIL STANDARD REGENERATIVE RECEIVER.

(By "Insulator.")

Now that the Regulations are out and as they state that regeneration is permitted, I feel that I am quite in order in giving constructional details for this receiver. Those readers who have been following my articles recently will recognise it as the same circuit which I recommended for the Progressive Unit Panel Receiver.

Before going further I wish to state that the person who can convince me of a better circuit will have to be "some" convincer. In this, I recognise what is to me the finest circuit obtainable, as it is simply the P1 with the aerial coil

- 1 Marco 30 ohm. Rheostat.
- 1 Marco Variable Grid Leak.
- 1 77 a 23,0005 Condenser.
- 1 77 a 43,0001 Condenser.
- 1 .00025 Grid Condenser (Dabiller).
- 3 Bakelite top terminals.
- 1 ValveHolder, 2 3in. dials.

You will notice I haven't given the brand of valve holder, as I am leaving it to yourselves to decide between English and American valves. I have designed the set to use either a Marconi D.E.3 valve or a UV 199 valve. Should you decide on the former, a standard English holder will be necessary, whereas if the UV. 199 be your

Marco single hole fixing products. The Polar holder is new from me but in it I have discovered something real good. The vernier adjustment is a splendid feature, one well worthy of approbation. Well, here's for the real work.

Trim up the bakelite, using an ordinary plane for the purpose, and mark it out and drill the necessary dimensions being given in Figure 2. While you are looking at Fig. 2, pay attention to the two black "holes" near the top of the panel. These are necessary to enable the connecting wires of the Primary Coil to be brought through the panel. These holes are spaced 9/16th of an inch apart. I haven't marked this measurement as I didn't have room on the drawing. The two condensers, grid leak, S.P. switch, and rheostat, all require a 1/4in. hole, a 5/32 in. hole will suffice for all other requirements. All the terminals are 2th of an inch from the edge of the panel and you will see that the 6 terminals on the right are exactly 1 inch apart. Drill all the 1/4in. holes, change the bit and drill the remaining holes with the 5/32nd drill. By using Brasso or if preferred some whiting and water, a splendid polish can be brought up on this panel.

Place the panel on one side for a few moments and turn your attention to the Polar holder. Do you see the two little screws on the outside of the movable plugs? You do, good! Well take a flexible lead from top screw of the plug and to the nearest top fixing screw on the back of the holder, take another lead from the bottom screw of the plug to the bottom fixing screw on the back, repeat these operations for the other movable plug. This will allow a neat connection being made at the back of the panel. Leave your holder down and assemble the components, firstly terminals, next grid leak, rheostat, S.P. switch and then the variable condensers. Now attach the coil holder, being careful to note that the flexible leads make proper contact with the screws. It would be

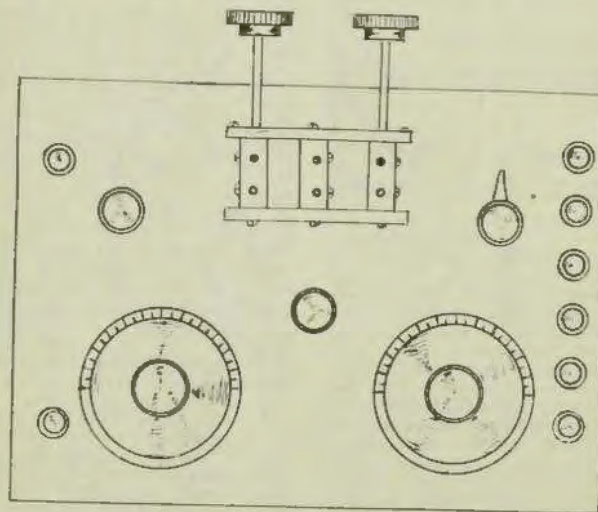


FIG 1

inductively coupled. It will be found quite simple to construct and will function admirably.

- Here is what is needed:—
- 1 Bakelite panel, 11 1/2 x 8in.
  - 1 Polar 3-coil camvernier holder.
  - 1 Marco Series-Parallel Switch.

choice, I should recommend a Marco socket as it has a cushion to lessen the microphonic noises which both these valves are inclined to produce. So you see it is up to you.

Notice again I have specified

PARTICULARS OF FROST LINES ON PAGE 4 AND 5.

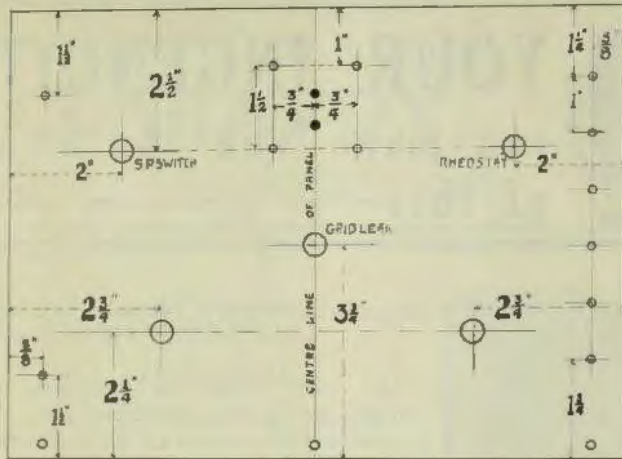


FIG 2

perhaps advisable to use washers for contact purposes.

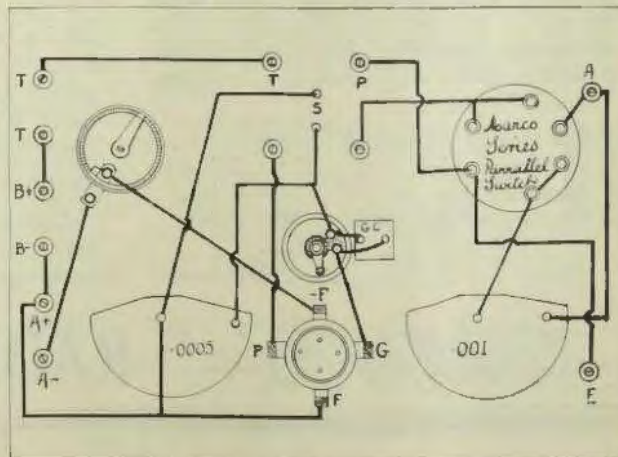
Do you know I nearly forgot the baseboard. That would never do, would it? Procure a piece of maple 10 in. x 6 in. x 3/4 in. and shellac it on top and bottom. Interrupting here, let me advise you that I make my shellac in this fashion.

From Mrs. Insulator's pantry I beg, borrow or steal an empty pickle bottle and into this I tip some shellac, say half full. Once again I resort to the pantry, and in a similar manner I—well commandeer—sufficient methylated spirits to cover the shellac. The bottle is then shook for a few moments and allowed to stand a few hours before using. Always keep it well corked and always keep a good supply of corks on hand as the dashed things always have a habit of refusing to be removed when wanted. All good shellac bottle corks do this.

But where was I? Oh, yes! shellac the board and to it screw the panel. I will leave it to you to screw the valve holder down to this baseboard. Room for the purpose will be found between the variable condensers. I have not made any provision for peep holes in the panel. Should you desire these it will be simple to drill the necessary design, taking your measurements from the centre line of the panel between the condensers. I should advise you how to fit the grid condenser to the grid leak. This is done by unscrewing the nuts from the grid leak and slipping the condenser on the two spindles. The Dubilier brand just

through this little job in half an hour or so.

Everything being completed, you can now listen in. Attach your A battery (3 dry cells in series) the B battery and telephones. Plug in the coils. Speaking of coils, I am again advocating the same coils as I did last week, only then I called them the Stokes coil, whereas the proper name should be the Radioke coil. Don't forget this name when buying your coils. It represents something good. But we want to listen in, don't we? So let's get back. With your aerial and earth connected to their respective terminals, light up the valve. Keep your tickler away from the secondary coil and slowly turn the dials of your variable condensers until you hear the station. Juggle the condensers until best results are obtained and gradually bring your tickler a little closer. Squawks a bit, does it? Alright turn the knob of the grid leak and lower your filament slightly at which the squawks will disappear. Play about with the set for a few moments until you get best results. It won't be long before you will be quite accomplished, and you will invite all your friends to hear the "Wireless." Funny what a lot of friends you have when you have a "wireless." I have noticed this very much, people coming from all parts and claiming friendship. Strange isn't it? Do you know I am thinking of renaming my house "Liberty Hall." It certainly seems to be (Continued on Page 30, Col. 3.)



BACK OF PANEL FIG 3

# Listeners ! YOUR INGENUITY In . . . . can make you the owner of this

**H**ERE'S your opportunity to own a set capable of "listening in" on the long distance stations, and bringing entertainments into your home.

Starting August 8th and closing October 8th there will be a competition for the amateur who constructs the best "Crystal Receiving Set."

The competition is divided into two classes:—

Division "A"—For Competitors 18 years and under.

Division "B"—For Competitors over 18 years of age.

The prize in each division; one Claravox Four Valve Radio Receiving Set, complete with valves, Amplion Loud Speaker, "A" and "B" Batteries. The entire set assembled in a magnificent polished cabinet and placed in your home. Value—75 guineas.

Points will be allotted as follows:—

Workmanship . . . . .	100 Points
Design . . . . .	100 Points
Quality of Reception . .	200 Points

Total . . . . . 400 Points

Judge:—Editor of "Wireless Weekly," whose decision will be final.

The only conditions governing the contest are that competitors must be genuine amateurs, and all the component parts, with the exception of the cabinet, to be purchased from us.

You will notice that the highest number of points are allowed for Quality of Reception. Our Radio parts are of the highest quality, and from enamel wire to head-phones are guaranteed to give the best results for clarity of reception. They are reasonably priced because we are not burdened with heavy overhead factory expense or excessive shop rent.

And, if you don't win, you'll have had all the joy of creating your own Radio Set. You'll have had the benefit of our expert advice—the advantage of buying parts which are absolutely correct in every detail. You can't lose. You gain at every stage of the game.

Come and see us at once. Don't delay. It's not every day that such an opportunity is offered to you.



## RADIO COMPANY

*Beautiful four valve*  
**CLARAVOX**  
*Radio Receiving Set*

*Experience  
the Joys  
of Radio*



**K** NOW the thrill that comes when famous men and women speak or sing—when concerts are given—when the Theatres broadcast their programmes or when wonderful orchestras perform. . . All these joys can be yours with the "Claravox". You can hear Melbourne, Brisbane and even more distant Stations.

The Claravox has been developed by two of the foremost Radio experts in Australia. Mr. W. H. Hannam, designer and construction supervisor, spent 18 months in the Antarctic with the Sir Douglas Mawson Polar Expedition, as Chief Wireless Engineer. He served 2 years as Wireless Instructor at Corps Headquarters, A.I.F. in France.

Mr. Hannam's first license was issued in 1908. He is co-founder of the New South Wales division of the Wireless Institute of Australia, the first wireless body formed here. His broadcasting station, 2YH, is well-known to all Radio enthusiasts. . . . . Mr. Z. J. Jacobs, Business Manager, has

been associated with Wireless as far back as 1907 when the science was in its infancy. Since the war, Mr. Jacobs has "listened in" on the great stations in England, America, France Belgium, Germany, Switzerland and Italy, and seen the conditions under which broadcasting can best be carried on.

The Claravox Radio Receiving Sets are the outcome of the experience of these two men, well versed in the fundamental principles that govern successful reception, and to use the words of Mr. Jacobs "In my wireless experience I have not found any instruments to equal the Claravox Receiving Sets."

The Offices of the Claravox Radio Company are situated on the fourth floor of Adams Chambers facing Hyde Park, one door from Park Street. You are cordially invited to visit us—to "listen in" through the Claravox any evening (except Sunday) between the hours of 8 and 9 p.m. There's an automatic lift at your service.

**4th Floor, Adams Chambers (one door from Park Street)  
195 Elizabeth Street - - - - Sydney**

## Commonsense Talks.

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

*Are you following these articles by Mr. F. Basil Cooke? As the heading implies, they are full of sound commonsense. Based upon a wide experience of wireless, these articles are constructive, and the advice contained in them will be found extremely beneficial to those tackling wireless for the first time.*

**L**AST week the writer dealt with the Super Hetrodyne as applied to Broadcasting, and in that article pointed out the reason which led to the evolution of this circuit. Mention was made of the Neutrodyne as another solution of the capacity losses in a valve, and it is proposed in a subsequent article to deal with this latter circuit.

In order that these chats will not be misunderstood, only the Broadcasting view of wireless is being considered. Admittedly there are a number of super circuits for special work, capable of giving excellent results when handled by experts, but it is very questionable if these same circuits would be as efficient if used by the general public to hear Broadcasting.

The title at the head of these short discourses is "Commonsense Talks," and as such it is intended to treat the various subjects, and only deal with that aspect which is of interest to the majority. Speaking of commonsense as applied to wireless, it seems remarkable that so many of us seek advice and direction from America, ignoring entirely the work of our own countrymen. The old adage that a prophet is never recognised in his own country is particularly true in this case.

From the commencement of wireless Australia has been in the lead so far as the amateur is concerned. Commencing with the Wireless Institute, this was absolutely the first amateur organisation in the world; this alone is a very creditable achievement. In the early days of crystals the Australians led the world in long-distance reception. No one knew anything about it, as it was simply taken as a matter of course, while, whenever an American or an English amateur performed an experiment only half as good as our own, he would be photographed, his circuit would appear, and a lifelong history of his ancestors would be published in every magazine

throughout the world. Even our own superior men would be forgotten in the universal hero worship of a stranger.

This state of affairs is, to say the least, deplorable, especially as it debars the public from having the very best. If a general recognition were given to our own pioneers, it would encourage them to still greater efforts, and give Australia a more prominent place in the wireless world at large. This, of course, would strictly benefit the Australian public as a whole.

Broadcasting is so new to most of us here that the average citizen is in a maze as soon as he begins to read some literature on the subject. Many advertisers offer such a variety of circuits incorporated in their sets, that the probable user is totally at a loss to know just where to get his advice. Further, we all have a tendency to believe our own set superior to any other. This is a very natural form of conceit, because it never occurs to us that we may have made a mistake. This, again, places the beginner at a disadvantage, because, being perhaps suspicious of a commercial house, he seeks the advice of a friend who already has a set.

In choosing a motor car, the intending purchaser gets in the car is shown how to drive it; he is convinced that it offers sufficient comfort; that it is economical enough, and that the price is right. That is all there is to know. He knows that the performance of the car during the demonstration in Sydney would be equally satisfactory at Dubbo or anywhere else. With wireless, however, this is not so, and because a set gives a satisfactory account of itself at the place of demonstration, it does not necessarily follow that it will behave in like manner in the home of the purchaser.

Where, then, may such information be obtained? The answer is simple. There are a great number of Wireless Clubs throughout the country, and

most of the members are quite competent to give this advice. Especially does this apply to the Wireless Institute and to affiliated clubs. The members of these organisations are, first and foremost, experimenters, and have a wealth of observational data at their finger-tips. Being one of those who has been associated with amateur wireless since its inception, the writer knows the wonderful spirit of brotherhood existing between wireless men. It would certainly be the exception, rather than the rule, to find a club unwilling to give such advice.

There is another method of obtaining correct advice, namely, to call upon some reliable wireless dealer who has both the facilities and the honesty of purpose to give this advice; then to the prospective purchaser I would say, forget everyone else, and carry it to a conclusion.

While it cannot be denied that most of the dealers may be relied upon to give satisfaction and service, the commencement of every new industry brings in its train a certain number who open up business simply to be in the swim, and there can be no doubt that the wireless industry will be to a certain extent penalised in this way. There is much more required of a dealer than merely selling a set; there is a service to give and advice to be offered. The prosperity of the wireless dealer will depend to a great extent upon those factors.

## Wireless Apparatus

New or Second-hand,  
Bought, Sold or Exchanged

### HOWELL'S

19 Barlow Street  
SYDNEY

PHONE : M A 1133  
OPEN TILL 9.30 FRIDAY NIGHT

READ PARTICULARS OF THE NEW FROST LINES ON PAGES 4 & 5.

# A Power Transformer

(By L. N. Schultz (3L.O.))

**B**ECAUSE of the difficulty of obtaining suitable data as to the number of turns of wire, and size of core, etc., quite a number of experimenters are compelled to buy their power transformers rather than construct their own. I propose to give details necessary for the construction of a transformer suitable for working on 240 volts A.C. This transformer has three secondary voltages—one of 10 volts 10 amps for the filament, one of six volts 22 amps for the Philips Rectifier and the third of 2000 volts with a centre tap for the plate supply, all of which may be modified, as will be seen later.

From a motor or dynamo works, procure sufficient transformer iron to make a pile 5in. high, 5 in. long, and 1½in. wide. Pack this iron as shown in Fig. 1, to make a rectangular core 2in. high, leaving a hole in the centre, which is known as the winding window, the size of which is 3½in. x 3½in. Using adhesive tape, bind three of the legs tightly together, then carefully pull each piece of iron from the fourth leg. This action leaves a U shaped core, on which is fitted the winding when completed. It is now necessary to prepare formers on which to wind the coils.

Obtain a piece of pine (or any other wood for that matter) of the size of 2½in. x 1½in. by about 8in. long. Pay particular attention to

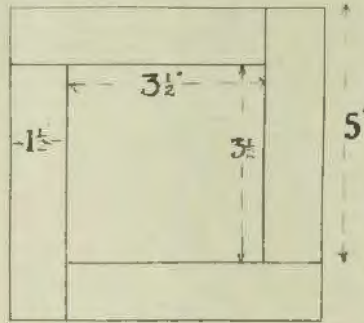


FIG 1

the accuracy of these measurements which you will note are exactly one eighth of an inch larger all round than the section of the core. This provision is made for insulation. Cut this piece of wood into three pieces; two 1½in. long and one 3½in., and through the centre of each, drill a hole sufficiently big to accept a bolt. Fashion two wooden ends from some ½in. wood, the size in each case being 5in. x 5in. These ends are now bolted to the central piece of wood as shown in Fig. 2.

On the largest former (the 3½in.) wind 960 turns of No. 17B and 8 enamelled wire. Make this winding as neat as possible—putting a strip of paper or oiled silk between each layer. At the eight hundredth turn take a tap. I should have mentioned that before starting winding two layers of thick paper should be wrapped round the 3½in. timber as a protection. Carefully remove the end plates of this former, and slide off the coil. Handling the coil gently, wrap it all over with ordinary linen tape, as is used by dressmakers. Now that this is completed proceed to wind the secondary pies, and as each has to be wound with 4200 turns of No. 28B and S. D. C. C. wire, in layers, it would perhaps not be advisable to do this by hand. However, wrap two or three layers of brown paper around one of the smaller formers (the 1½in.) and tack four pieces of

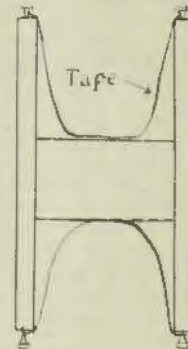
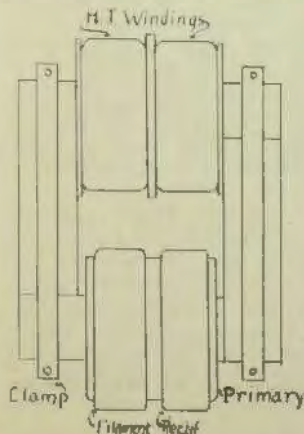


FIG 2

the linen tape across two edges of the former, at the corners, so that when the wire is wound on, it will be wound on the tape, enabling the coil to be tied together when completed. The second former being prepared, proceed now to wind 4200 turns of the 28 D.C.C. wire in layers, tightly on the former, and on the completion of the 4200th turn, remove the tacks and tie the ends of the tapes together, this action enabling the coil to be taken from the former without any fear of collapsing. Repeat the whole of this procedure on the remaining former, binding each coil with linen tape as was previously done. The filament and rectifier winding are now wound directly from the primary. To do this cut a strip of empire cloth 2½in. wide and 30in. long, and wrap it directly from the primary coil. Then for the filament wind on 40 turns of No. 14 B and S.D.C.C. wire, and then wind 24 turns of No. 12 B and S.D.C.C. at about ½in. from the filament coil. This supplies the necessary 6 volt, 22 amps to the rectifiers. Wrap each of the legs of the transformer with 5 layers of empire cloth 3½in. wide and cut three pieces of mica sheet of the same size as these secondary pies also with a hole 2½in. x 1½in. in the centre. You are now ready for assembly, and great care should be exercised in this matter.

(Continued on Page 40, Col. 2.)



SEE THE FROST LINES ON PAGE 4 AND 5.

## VICTORIAN NOTES.

(From Our Special Correspondent.)

VICTORIAN amateurs are still jubilant over the success of the recent Wireless Exhibition. The organizing secretary, Mr. J. B. Masters, was voted an honorarium of ten guineas at a meeting of the W.I.A. (Victorian Division) Executive, for his highly efficient services in bringing the exhibition from a somewhat dubious beginning to a highly successful conclusion. Mr. Masters is an architect by profession, as quite a number of wireless enthusiasts are, and he is undoubtedly the right man in the right place in the W.I.A. as, true to name, he masters every problem set him. The usual drawback, however, in any institute possessing a man of his type is that the rest of us are inclined to sit back and leave it all to 3LM, which is unfair to him, and bad training for the rest of us.

The club movement in Victoria is exceptionally strong, and since the W.I.A. took a new lease of life some two years ago, many new clubs or "Sections" as they seem inclined to call themselves, have been started. Already one or two sections have become further sectionized, which is quite in order if done without ill feeling, but it is regrettable when prominent members cause division by brooking no rivals near their thrones.

The new regulations have so far been approved by amateurs, mainly (be it whispered) because many members of clubs are at heart mere B.C.L.'s and care nothing for the onerous honor of being officially classed as Experimenters. The W.I.A. will shortly have to draw a sharp line between genuine experimenters and those who merely listen in. Office-bearers in particular, and especially lecturers, should be expected to have more than the desire for publicity to qualify them for such positions.

The fine old crusted name of "Wireless" has lately been subjected to much ignominy among those whose superficial knowledge of science and their mother-tongue prevents them from seeing beyond the four walls of a receiving or transmitting station. With due respect for our Trans-Atlantic cousins, it should be evident that the prefix

Radio belongs of right to rays such as are emitted from Radium and the Coolidge tube. The term "Wireless," of course, applies quite exclusively and rightly to those electro-magnetic waves that require no wires for their transmission through space. The most striking thing about "Wireless" to the general public as well as to the scientists is that telegraphy and telephony are now no longer dependent upon the networks of wire and cables that were once the indispensable adjunct of long-distance electrical transmission. The term radio-activity covers quite another set of phenomena altogether. It is noteworthy that the French also speak of "Wireless," their expression *Telegraphie sans fils* meaning exactly the same.

Amateurs in Victoria as well as elsewhere will have to look to their laurels. Much has been talked amongst us recently about short wave efficiency and long distance records, but no one has so far reported having received England, as Mr. Allsop of the New System Co., has done in Sydney, while Marconi's Beam System is evidence that the commercial interests have not been neglecting short-wave work as some amateurs say they have. Messrs. Cox, Hull, Howden and a few other ardent experimenters on this side have been dabbling around lengths as low as 100 or even 65 metres with promising results, and report that among other advantages interference and static are reduced. On top of this we are shortly to be invaded by waves from the new broadcasting station at Braybrook, 1720 metres long. There is thus plenty of scope for experimentation in both classes of waves.

Several amateurs have been patiently sifting out the ether and eliminating jockys and other strange wild fowl in the endeavor to hear K.G.O. Mr. V. Fox, of Malvern Club, regularly has K.G.O. with his Sunday tea, using a single valve and crystal reflex, while numbers of others, less fortunately situated, also claim the long-distance medal, but on bigger sets.

The number of "beardless boys" who are now circumnavigating the ether with good results, is a healthy

forecast of future progress. It is quite easy, so 16-year-old Colin Sampson of East Cumberwell says, to hear 2RL, Farmers, and even 2HM, of Armidale, on a single-valve set, provided you build it carefully, know how to operate it, live apart from the madding crowd of gregarious "jockys," and generally happen to be built that way yourself.

Mr. A. J. Stocks of Canterbury is another, not quite so youthful, of our promising amateurs. He has a theory that a thorough training as an ordinary electrician makes you neat and exact enough to secure good results. Somewhere about 1912 he started tickling crystals with the usual feline accessory and was able to read Sydney, Adelaide, Brisbane and all those more or less adjacent stations on specially-treated iron pyrites and a pair of Murdoch's. His record was Macquarie Island (then MIQ) 1200 miles away in the South Pacific. Since the war his youthful fancies have lightly turned to thoughts of valves, and having won a well-deserved first prize at the recent Exhibition with a 2-valve Armstrong two variometer circuit, he sits back at night and enjoys transmissions from 2HM, 2YL, 2EO, 5BQ, and a host of other stations across the various borders. Farmers of course comes in on the loud speaker, but then everybody hears Farmers, nowadays.

The Wireless Institute is rallying to members to attend a central function once a month. To this end an Inaugural Tea is soon to be held at Anzac House, followed by an adjournment after tea to the more ethereal atmosphere of the usual monthly lecture and discussion. Tea first and talk afterwards is then to be a monthly fixture. By this means we are to meet Who's Who in Wireless, including, of course ourselves.

3RM, 3BU, 3LM, recently inaugurated the new research into fading and other phenomena which our Institute has arranged to carry on conjointly with the Weather Bureau. Victoria has been divided up into little bits, each with its observing station, and we hope to enrich the world's knowledge of the causes, or at any rate the accompanying meteorological circum-

READ PARTICULARS OF THE NEW FROST LINES ON PAGES 4 & 5.



stances, of fading, dead spots, and such mysteries. The above 3 members have discovered a "dead spot" of their very own somewhere north of Braybrook and it is said they meet there periodically in an attempt to galvanize it into life.

The hospitals are profiting by the broadcasting facilities now coming into vogue. Excellent sets donated to the two leading public hospitals by New System Telephones Ltd., and Associated Radio, were on show at the recent Wireless Exhibition, and now the Wireless Institute is organising for the donation of a similar set to Anzac Hostel. St. Kilda section hit on a good idea of raising funds by parading the streets with a motor car from which a portable set regaled the delighted denizens of St. Kilda with peripatetic music. The amount of funds showered on them as an inducement to go into the next street was more satisfactory than complimentary. Incidentally a lot of interesting observations were made upon the screening effect of houses and other wayside obstructions.

One of the fruits of the recent Exhibition must be the removal of that feeling of estrangement between Sydney and Melbourne. Hitherto what looked very much like petty Interstate jealousy and intrigue have played havoc with the spirit of camaraderie that should exist between enthusiasts so interdependent. The fact that a straight line on the map merges into the river Murray can hardly constitute a boundary for wireless purposes, and it is rather a pity from some points of view that the Wireless Institute of Australia has allowed itself to be segregated into State Divisions. Victoria claims to be better organized than New South Wales, which probably only means that there are more clubs in Melbourne than in Sydney, but after all, it is the individual experimenter that counts for most in the progress of research, and certainly the experimenters in both places would require some pains to sort them out in a more geographical order of merit. So far we Victorians must recognise that the laurels lie with Sydney for having heard London and Birmingham B.B.C. telephony, although we seem to have beaten N.S.W. in the logging of American code. The Grand Order of DX2 now awaits amateurs in both places who can get the habit of listening

Westward Ho for England with uniform success. Code from there has been almost a commonplace for years, so why not get some telephony for a change? By the way, who knows which way wireless waves come to us from our antipodes? Or can we have it both ways? Has Perth, for instance, a better chance than Sydney or Melbourne of being first to pick up 2LO beyond the seas?

When the amateur wireless enthusiast gets beyond the somewhat barren stage of trying-out circuits devised by himself and other wire-pullers, what higher aim could he attain than conquest over the human pain caused by faulty modulation of music and speech from speakers more or less loud? Our Wireless Exhibition was among other excellent things a most appallingly excellent example of how not to reproduce speech and music. A visit to any enthusiast's home should always be followed within a day or two by a course of grand opera or other restorative for the auditory organs, otherwise we are apt to sacrifice musical taste on the somewhat blood-curdling altar of wireless enthusiasm. It is interesting to note that a new periodical, "The Musical News," is shortly to be published in Melbourne, and our energetic 3LM is to be in charge of a section devoted purely to the reception of music by wireless. 3LM has an ear for music as well as a knowledge of audio-frequency, so we hope to hear from him if we are ever asked to endure a little more than Bray and less than Brooks from our reception of the new broadcasting station. Any amateur who devises an entirely satisfactory set for the reception of 1720 metres music so as to fill a fair-sized public hall will also fill a long-felt want, and will hardly remain an amateur for very long in this country that is crying out for experts.

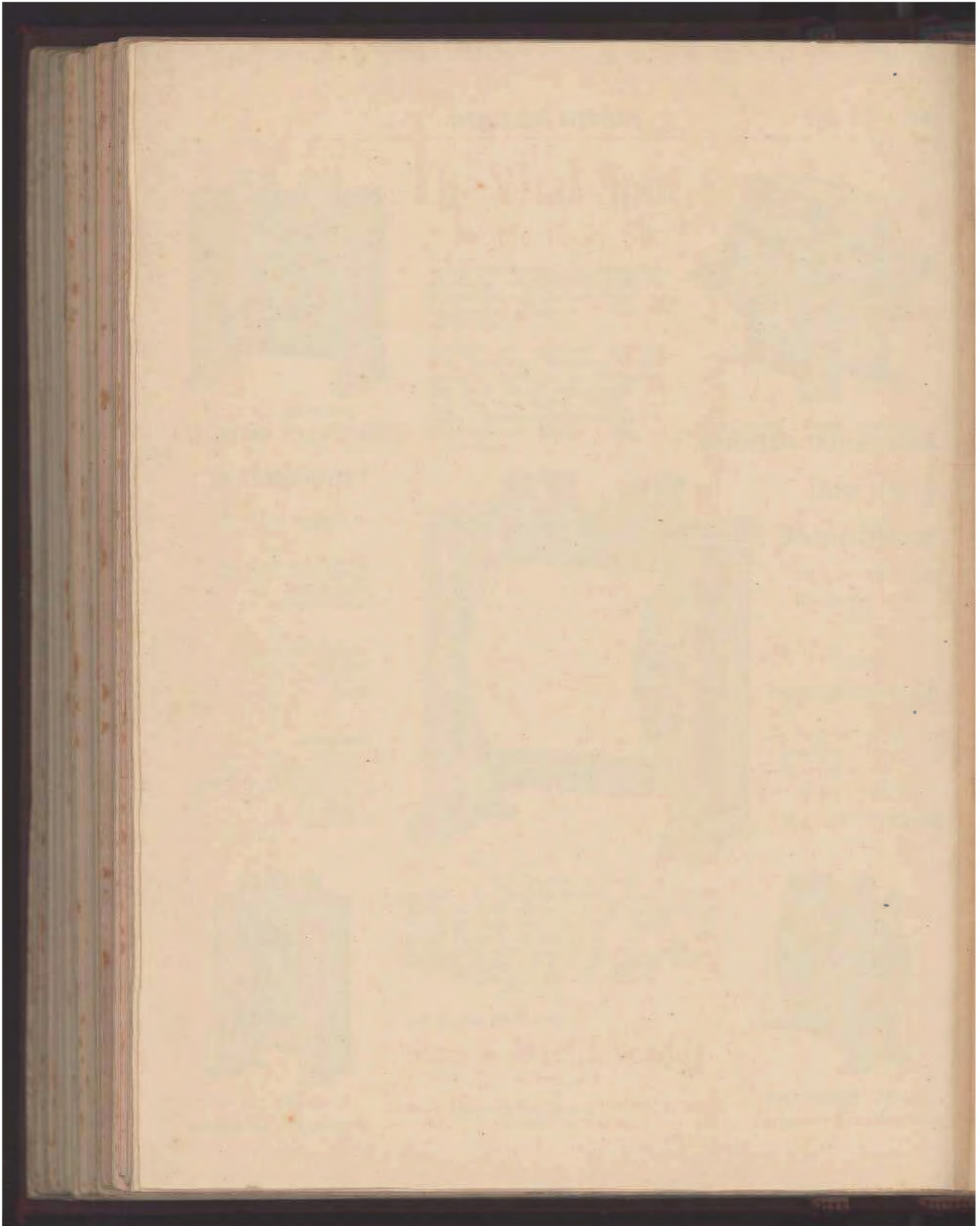
A visit to Braybrook recently disclosed that long hoped for station picturesquely situated among flat green paddocks and hedges, interspersed with dwellings, factories, waterworn boulders, and far-away hills seen through the mists and smoke of Preston. You go to Footscray and take the tram to its terminus in Ballarat Road. Thence twenty minutes walk brings you to the foot of two grey towers and four slim wires, two hundred feet

high, and six hundred long. Underneath is the counterpoise covering with its mesh nearly the whole eight acres, with the transmitting station set in the midst thereof. An eye for elegance was not consulted in the design of the towers, which are merely lattice girders set on end, with none of the graceful curves of the Eiffel Tower. They were built up on the ground, raised into the upright by a winch, and stayed by three times three strong cables with their ends hooked into massive blocks of cement embedded in the earth. The aerial and counterpoise terminals enter the building by tension rods of stout insulation, further protected by anti-corona rings, and the insulators in the wall are corrugated porcelain cones nearly a foot across. Inside the sanctum are the usual wireless contrivances, operated by three-phase supply from the Footscray Council. Looking like the cells of some melodramatic penitentiary, the transmitter and modulator stand enclosed in stout metal lattice-work of the design perfected by Amalgamated Wireless. The land line glides unobtrusively in to one side of the operating theatre, and nothing more unlike a place whence music, song and elocutionary efforts are to be dispensed throughout the ether could possibly be imagined. This of course is not the rendezvous for distinguished artists, who will make their bow to the microphone on the ten-miles distant roof of the "Herald" Office in Melbourne. Contemplating a total input of 5 kilowatts, the station is at present testing on much less, but already it has favorably impressed those who listen-in. Delays seem inevitable to enterprises of this nature, and it is unlikely that broadcasting on a regular basis will be started for some months as yet. The station should, however, be delighting owners of sets far and wide over all Victoria, as well as in places more distant, some time in the coming Spring.

It must always be a matter for mild wonder why the many excellent amateur transmitters of Melbourne have not merged into an Amateur Broadcasting Company long ere this. The dragon in the path can hardly be the expense, since individual transmission must

(Continued on Page 27.)

READ PARTICULARS OF THE NEW FROST LINES ON PAGES 4 & 5.



Hello Everybody!

# Wiles' Wonderful Wireless

SAME QUALITY  
SAME PRICES  
SAME SERVICES

and Electrical Stores

384 PITT ST. (Opp. Anthony Hudson & Sons Ltd.)  
6062 GOULBURN ST. (1 door from Pitt Street)  
23 PITT STREET. CIRCULAR QUAY

Construct your own Receiving Set. We supply complete building instructions and advice with each order

SPECIAL ANNOUNCEMENT

Complete stocks of all parts for the Super-Heterodyne Receiving Set, Complete Broadcast Receiving Sets and all parts for Home Construction.

SINGLE SLIDE CRYSTAL SET

150 to 1200 Meters	
1 Impregnated C.B. Tube	0 0 0
2 Maple Ends	0 2 0
Box, 24 Strand Wire	0 1 0
1 N.P. Slider and Bar	0 0 0
1 N.P. Terminal, Aerial and Earth	0 0 0
1 N.P. Detector Unit	0 1 0
1 Guaranteed Crystal	0 1 0
2 Extra Phone Terminals	0 0 0
1 extra Slide	0 1 0
1 Phone Condenser	0 1 0
Aerial Equipment	0 7 0
<b>Total</b>	<b>41 1 0</b>

DOUBLE SLIDE CRYSTAL SET

Single parts as Single Slide Set	41 1 0
Additional Parts 1 N.P. Slider	0 2 0
<b>Total</b>	<b>43 3 0</b>

Construct your own Amplifier to connect to your Crystal Set in order to use a Loud Speaker.

1 STAGE AMPLIFIER

1 Ebonite Panel	0 2 0
1 Valve Holder	0 1 0
1 Rheostat	0 4 0
1 Transformer	1 2 0
4 Pentodes	0 2 0
1 Panel Wire and Solder	0 3 0
1 Amplifying Valve	1 10 0
1 Pushed Slap Cannon	0 10 0
1 A. Battery	0 4 0
1 B. Battery	0 12 0
<b>Total</b>	<b>25 0 0</b>

Complete parts for 2 Stage Amplifier, giving double the amplification of a one Valve—  
25/0/6.



RADIO HEAD SETS

Mal. Single Hand Type	0 10 0
Mallo 4000 ohms	1 10 0
Pace 4000 ohms	1 10 0
Pratt 2000 ohms	1 10 0
Trimm's Dependable	2 10 0
Stromer 2000 ohms	1 10 0
New System 4000 ohms	1 10 0
Front 2000 ohms	1 10 0
Baldwin Single Unit	1 10 0
Radiola 4000 ohms	2 10 0
Brassier's Matched Tone	3 0 0
Biograph, 2000 ohms	0 2 0
Western Electric 4000 ohms	0 4 0
Shelton 4000 ohms	0 4 0
Trimm's Professional	2 10 0
Western Electric 2000 ohms	2 10 0
Nathan 2000 ohms	2 10 0
Baldwin, with Mica Diaphragm	4 0 0
Brown's 2000 ohms, adjustable diaphragm	5 0 0

VARNIER CONTROL CRYSTAL SET

150 to 1200 Meters	
1 Ebonite	0 1 0
1 Cardboard Tube	0 0 0
1 Cardboard Tube Mount	0 1 0
Box, 24 Strand Wire	0 1 0
1 N.P. Control Slide	0 2 0
1 N.P. Terminal	0 0 0
1 N.P. Inducance Switch	0 2 0
1 N.P. Detector Arm	0 2 0
1 N.P. Crystal Cup	0 0 0
1 Guaranteed Crystal	0 1 0
1 Phone Condenser	0 1 0
Panel Wire and Solder	0 0 0
Polished Maple Cabinet	1 0 0
Aerial Equipment	0 1 0
<b>Total</b>	<b>22 8 4</b>

LOOSE COUPLER CRYSTAL SET

150 to 1200 Meters	
1 oak Cardboard Tube	0 1 0
1 Set Maple Ends	0 2 0
1 Maple Base Board	0 4 0
Box, 24 Strand Wire	0 1 0
1 N.P. Slider and Bar	0 2 0
10 N.P. Control Slides	0 1 0
1 N.P. Switch Slap	0 2 0
1 N.P. Inducance Switch	0 2 0
1 Slide Ebonite	0 1 0
1 N.P. Detector Arm	0 2 0
1 Guaranteed Crystal	0 1 0
1 oak Aerial and Earth Terminals	0 0 0
2 Extra Phone Terminals	0 0 0
1 Phone Condenser	0 1 0
1 Secondary Rods	0 1 0
1 Silver Support	0 0 0
1 yard Flexible	0 0 0
Aerial Equipment	0 0 0
<b>Total</b>	<b>23 10 0</b>

OUR GUARANTEE

It is our intention that every article in this list shall be truthfully described. Therefore, we guarantee everything you buy from us to be satisfactory to you in every detail. You take no risk whatever in sending us your order, for unless you are completely satisfied with the goods and your saving, you may send back everything you buy from us and we will promptly return your money and all transportation charges you have paid.

**W. HARRY WILES**  
Radio and Electrical Supplies

ESTABLISHED 20 YEARS

Please address all communications to our Head Office, 60-62 Goulburn Street, Write for New List B. F.

FOR EVERYTHING

# WIRELESS

E. R. CULLEN'S

RADIO STORE & ELECTRICAL SUPPLY

96 BATHURST STREET . . . SYDNEY

TELEPHONES: CITY 869 & 2596

IS FIRST AND FOREMOST

## Three Valve Signal Set For Suitable Slogan

*Example: "CULLEN CAN COMPETE"*

Each entry from city or suburban readers to be accompanied by one of my cash docketts for any value. Country readers -- no restriction whatsoever; post them in. Envelopes to be endorsed "Competition." The decision of the Editor of this Journal to be final. Entries close on August 22nd. Results in "Wireless Weekly," August 29th.

E. R. CULLEN'S

Electrical Supply and Radio Stores

96 Bathurst Street . . . Sydney

Continued from page 23.

cost each one a great deal more, while subscriptions could reasonably be solicited from a public already well-used to subscribing to amateur functions ranging from football to private theatricals. A promising start was made some time ago at the University Conservatorium, but it lapsed. The best cure for gramophonitis is a course of good vocal music over the ether. When will some one give us a repetition of the dose?

#### ITEM.

Ebonite. Have you ever suspected the harmless necessary ebonite of being no better than it ought to be? Some ebonite makes a highly effective Grid Leak, and thereby hangs a tale. Our club (no matter which) is building a Club set, and our worthy president has a set, of quite another sort, on local ebonite. So a member made enquiries, and behold the grades of ebonite made or procurable locally are as the sands of the sea for multitude, but not as like as two grains of sand are. Some of it that is good enough for the Navy that rules the salt sea waves of the South Pacific, is not quite good enough for wireless waves. So beware! It appears that ebonite in the making is passed between rollers to polish it, under heavy pressure. We all know how electrically excited ebonite gets when rubbed. It accordingly actually tears off a thin film of brass, if the rollers are brass, and feloniously sticks to it. Many of us like the shiny surface and haven't the heart to rub it off with emery and oil as per instructions (see any textbook), so the invisible brass specks form a bypath on the shiny surface, and away go our signals just when we think we've got them. Your ebonite may be all your fancy paints it, internally, and may stand up to 25,000 volts puncture potential, but wireless waves have a bad habit of sliding off along the surface. It is very doubtful whether any ebonite, however poor in quality, can be altogether bad in itself, so a course of home treatment to rub off the surface faults is likely to effect a cure. A pretty good test for suspected ebonite is to test a piece in the grid leak position on a circuit that already requires a fairly high value of normal grid leak resistance in order to function well.

## NEW RADIOLA MODELS.

### INTERVIEW WITH AMALGAMATED WIRELESS (A/SIA) LIMITED.

With the announcement of the Broadcasting Regulations, very appreciable interest is being displayed by the public as to the receiving sets which will be shortly exhibited for sale.

Our representative approached Amalgamated Wireless (A/SIA) Ltd. as to their future plans as regards sets, and were informed by Mr. F. W. Larkins of that Company, that the engineering department were at the present time engaged on the design and manufacture of the new model Radiola Receivers, and that full details of these will shortly be announced, together with their sale price, and delivery date.

It is the Company's intention to place on the market a number of types of sets, each of which will conform to the Company's high standard of manufacture, and will incorporate the very latest development in the technique of radio engineering. The Radiola line will range from Crystal Sets to various types of Valve Sets, all of which will sell at a price to suit varying purses, while a little later the Company will proceed with the manufacture of the Radiola super sets.

It is interesting to note that the tendency of the market in England and America has been to develop from the smaller type set made in innumerable designs, to the high-grade cabinet set built to harmonise with period furniture, and so self-contained as to require neither outside aerial or earth connection, while the loud speaker and batteries are also enclosed in the cabinet.

When one compares the sets of eighteen months ago with the sets produced to-day, there can be little doubt that radio designers have been extremely successful in their efforts to eliminate the number of controls with the result that Broadcast receivers of to-day can be operated with the utmost simplicity without in any way impairing the sensitivity of the apparatus.

The improvements that have been made in the type of cabinet are not less worthy of note than the progress that has been achieved in the technique of the apparatus itself.

The Radiola Broadcast Receivers will be wholly Australian designed and manufactured, and will incorporate the results of the work of many famous inventors, and there is little doubt that the new sets will find popular approval with the public. It is anticipated the new models will shortly be on display by the principal radio dealers throughout Australia.

### WIRELESS BROADCASTING NOTES.

*Wireless From Perth.  
Service Heard in Adelaide.*

To hear a church service held in Perth, more than 1000 miles distant, was the privilege of Mr. C. R. Churchward, of First Avenue, Joslin, on June 23rd, when he listened-in with a home made set to the wireless broadcasting of the Westralian Farmers' Co-operative Company's new station.

"At 10.30 last night", said Mr. Churchward, "I was listening-in to other radio stations working when I accidentally picked up the carrier wave of the Perth station. I tuned in to a wave-length of about 1200 metres and delightfully listened to 'The Glory Chorus' from 'Messiah', rendered by a large choir with orchestral accompaniment. This was at 10.35. The sound of the piano was very pronounced. Twenty minutes later the hymn, 'Jesus, Lover of My Soul', came in clearly over the phones, followed by a short address. Another hymn was heard, but static electricity and rain interfered with the reception. At 11.18 a short prayer, followed by another magnificent chorus from 'The Messiah' came through clearly, and at 11.28 the hymn 'Abide with Me' came rolling out of the ether. Four minutes later the carrier wave ceased and the station closed down.

"This Perth station is only a new one", continued Mr. Churchward. "I first heard it working on Thursday evening at about 9. A friend of mine (Mr. R. V. Cook, of Prospect) picked it up at the same time. When Perth can have an installation of this calibre transmitting entertainment and instruction far and wide, it seems that Adelaide is lagging behind in the wireless field, for there is nothing of that description in our city yet".

READ PARTICULARS OF THE NEW FROST LINES ON PAGES 4 & 5.

## Marconi Telephony Tests

**POLDHU** speaks to **SYDNEY**  
ENGLAND AUSTRALIA

Extract from letter:

"... In the successful experiment by which Mr. Marconi succeeded in establishing wireless communication between England and Australia, the greatest distance across which wireless telephony has taken place until now, use was made of transmitting valves, invented in the laboratories and constructed in the Radio departments of the well-known Philips Glowlamp Works Ltd. The transmitting valve used was a water-cooled type (triode) specially constructed for generating short waves."

Through **PHILIPS** Valves

The superiority of PHILIPS' LAMPS has long been recognised, and this feat demonstrates the pre-eminence of PHILIPS' VALVES. Ask for them, sold by all Radio Houses.

Wholesale distributors of Philips' Products:

**WARBURTON FRANKI LTD.**

307-11 KENT STREET, SYDNEY

Friday, August 8, 1924.

WIRELESS WEEKLY

Page Twenty-nine

## Wireless Institute of Australia, New South Wales Division

### AFFILIATED CLUBS.

THE advantages of affiliation with the Wireless Institute of Australia, N.S.W. Division were amply demonstrated at the Council Meeting of Delegates of the Affiliated Societies, held at the Institute head quarters, 82 Pitt-st., Sydney, on 29th July. There are now in all, 15 clubs affiliated, and those who have not yet done so should get busy and take the necessary steps. One of the advantages which have already accrued is that a strong sub-committee has been formed to arrange for co-operation amongst the Clubs for the purpose of obtaining lectures for Club nights. Those who have held executive office in the Clubs will realise the difficulty sometimes attending this most important branch of Club activities and the step that has been taken will be welcomed by Club officers. Arrangements have already been made for some lecturers to visit some of the suburban Clubs, and as the organisation is completed many beneficial results can be confidently anticipated. It is very encouraging to note the interest which is being taken by the delegates of the Affiliated Societies in the work which is coming forward and the whole hearted co-operation that they are giving is most encouraging to the officers of the Institute. There is no doubt that this move has been one in the right direction and much good has already resulted.

### RADIO RELAY LEAGUE.

Another result of the Affiliation scheme is that the activities of the Radio Relay League have been taken over by the Delegates' Council, and the sub-committee which has been formed to deal with this matter has been extremely busy. The organisation of the New South Wales transmitters is well under way and it has already been found practicable to conduct inter-state relay work. In this connection it is anticipated that before long information of an important nature will be made available to the various clubs affiliated with the Institute

by means of the Relay League, which will circulate the news to each district so that Club secretaries may obtain first hand information of important matters at an early date. Much spade work has yet to be done but the committee are looking to the transmitters of New South Wales for their whole hearted support and co-operation in this matter and they confidently expect that this will be forthcoming with the usual enthusiasm of the experimenters.

A. M. PERRET,  
Publicity Officer.

### THE ENGLISH EXPERIMENTAL TESTS.

(Mr. P. R. C. Holdsworth writes explaining the arrangements.)

I understand that elsewhere in this issue a notice will be found giving the times, etc., of an attempt by several British amateurs to effect direct communication with Australia or New Zealand. I think therefore that an account of how these tests came to be arranged will be of some interest. The tests originated in a "PowWow" held after a meeting of Radio Society of Great Britain, at which a lecture had been given on "Radio Trade Conditions in Australia and New Zealand." Several British amateurs were bemoaning the fact that it took at least three months between the despatch of a letter and the reception of a reply from this country, one or two also said that they had written to amateurs in this country and had not received any reply at all. The length of time taken by the mails and the fact that they were not sure who to write to here seemed to them to preclude any chance of arranging an attempt at direct communication. I promised therefore to be responsible that should they arrange to make an attempt to get through, that the amateurs on this side should at least be informed of the arrangements made. Having overstepped our time limit and been turned out by the Janitor of the Institute we proceeded to a near by "Eating House" of some repute and arranged the schedule as given elsewhere with the exception of that from 6XX, of which more later. The tests were arranged as early as possible as it was considered that the best conditions for reception were

necessary at this end, and that if the tests were deferred for any length of time local conditions on this side would be likely to become somewhat unsuitable. The times were chosen because it was stated that Poldhu during the successful tests, had been transmitting during these hours, and that no doubt the Marconi engineers had given this matter due consideration, and that we were not likely to effect any beneficial change. Another consideration affecting the times of transmission was that amateur transmissions are not supposed to take place until after Broadcasting hours. The tests from 6XX which is the official station of The Radio Society of Great Britain, was arranged during a chat with Mr. Philip Coursey, who, when he heard of the arrangements already made, suggested that the R.S.G.B. should transmit an official test over the same period. Of the stations engaged I know very little except that they will be in operation on from 100 to 150 watts, with the exception of 6XX which will be using a full Killo watt, and one other station which may have even higher power. 6XX on 115 metres puts about 6 amps into the aerial and has been reported to come in so strongly in Canada as to cut out local interference. The other stations will be on a somewhat shorter wave and will all probably be below the 100 metres. It may be of interest to note that all the leading British "DX" workers are getting down to the hundred mark, as such remarkable success has attended those already using this band.

It may also be noted that there is a difference in the methods of calling, used in the two tests, this is explained by the fact that in the official test from 6XX the official method is used. The British P.M.G. will not sanction the use of the American methods of calling, "CQ" is not allowed at all, and when international working is in progress the call of the two stations operating must be prefixed by letters allotted by the P.M.G. from the International list of call letters, while "de" must be used a separative signal. The letters allotted to Australia are "VII" and since "CQ" is not allowed it was decided to make the "Call Up" "VIIIVH—de—66XX. In the case

(Continued page 44, Col. 1)

The schedule of transmissions for the English tests will be seen on page 32.

The low power utilised in Mr. Churchward's receiving set makes his reception of the Western Australian station the more remarkable. The first broadcasting was picked up on Sunday night by detector tube only, and with this, voices and music were just audible. He then switched in a valve with two stages of audio-frequency amplification. The detector valve used was of 201A type with 1½ volt plate potential and 3 volts on the filament.

—Extract from "The News," S.A.

**A SIMPLE TIP.**  
(By E. W. Crepley.)

Perhaps this little article should be headed "How to stop that A.C. hum in ¼ a second, at the cost of no cents."

Probably a number of Radio fans will appreciate this simple remedy, so simple but seldom thought of. Most of the Super Sensitive receivers constructed nowadays are of the Ground Potential type, where all moving parts are grounded, such as the Neutrodyne and the D.X. Bringer-in; in self constructed sets. Often when the job is completed and put into action, a perceptible amount of A.C. hum is present. I have sought all sorts of information, but without any success in cutting out the noise. It is possible to eliminate the hum, but at the cost of weakened signal strength. Signals are what are wanted. On receiving D.X. phone or music faintly the hum sometimes becomes more than a nuisance, but in C.W. work there is little trouble, because the valve is brought more to saturation point than when receiving phone or speech. But yet again there is not the satisfaction of knowing that your set is properly functioning and right here is where one feels the need of locating the trouble. It can be found in half a second, and will cost nothing to instal on your present set. If it is not so strong to interfere with your D.X. work do not read any further, but should it do so, go out to your main meter board and cut the main switch off—you can then listen to that D.X. station without any interference from A.C. hum. Saves electric light bill too—especially when you make a habit of sitting up to one and two a.m.

in the morning. It will probably put you to less expense than a counterpoise or separate earth.

**UNITED COMPANY ESTABLISHES RECORD.**

There have recently been brought to our notice details of splendid reception in Western Queensland.

Using a standard five valve receiver, built by the United Distributing Co., Sydney, results were obtained which speak volumes for its efficiency and the skill employed in its design and construction.

Faced with the problem of evolving a receiver, which would be very simple to operate and which would give reliable loudspeaker operation over a distance of 750 miles. The United Engineers got to work with such results as may be judged from the following.

Accompanied by a member of the technical staff of the United Distributing Co., the set with its accessories left for Middleton Station, Queensland, a distance of 650 miles airline from Sydney. Arriving at Brewarrina at 7 o'clock on Saturday night the set was loaded on a motor lorry in preparation for its 200 mile trip further west, and left the same night, arriving at Middleton Station at 9 o'clock the next night. During the trip the set experienced a great deal of bumping due to the rough country the lorry was passing over. Notwithstanding the intense vibration it was subjected to on the trip, the set worked perfectly as soon as it was unpacked, and the batteries, etc., were attached. The first Station heard was Westralian Farmers broadcasting, with good volume and very clear. Immediately they stopped, Farmer and Co's, Sydney station, was tuned in, with great volume.

They were just starting their 1 o'clock session and the chimes and voices could be heard all over the room without any audio amplification at all. At 3 o'clock that afternoon K.G.O. was tuned in, but owing to the intense static, due to the stormy weather, could not be listened to with comfort. At 3.30 p.m. Farmer's were again tuned in, but as the static was very bad the set was tuned off until 4.30 when 2B.L. was tuned in, about two thirds of 2F.C.'s strength. That evening before 8 p.m. two New Zealand amateurs and three Vic-

torian amateurs were tuned in with good strength, besides numerous N.S.W. amateurs.

Later 2F.C. and 2B.L. were tuned in with very good strength. With 2F.C. the volume was so great as to necessitate de-tuning the set, in order not to overload the Magnavox loudspeaker. When the aerial was removed entirely from the set, 2F.C. could still be heard on the speaker. Earlier in the evening, whilst using an external heterodyne, 6XAD U.S.A. was heard on detector, with head phones, IYA N.Z. was also heard with good volume. At 10 p.m., 2HM. (500 miles away) could be heard all over the room on detector alone, whilst he was testing on speech and music. VIS on press could also be heard all over the room on detector alone as could VIB, VIM, and VIA. VKQ (together with his attendant harmonics) could be tuned in very good volume. Throughout the test not the slightest interference was experienced, due to the great selectivity of the set.

(Continued from Page 14.)

he dropped off his bunk expecting to alight on the deck, but found he was in the sea. Eventually he freed himself from the wreckage and clambered on to the wireless house. His plight was observed from the ship, and after some skilful manoeuvring by Captain G. L. Cline, he was rescued by means of a lifebuoy and line.

**THE RADIO Experimenters' Handbook**

By Philip R. Couroly.

Contents—Part I.  
The Aerial and Aerial Circuit.  
Receiving Tuners.  
Receiving Amplifiers and Detectors.  
Contents—Part II.  
Measurement of High-Frequency Currents and Voltage.  
Fundamental Formulae and Data.  
Aerials and Tuning Circuits.  
Tuning Coils and Inductances.  
Condensers.  
Valves and their Constants.  
Simple Measurements with Valve Circuits.  
Price: Part I.—5/4 posted.  
Price: Part II.—5/4 posted.  
N.S.W. BOOKSTALL CO., LTD.  
476 George St., Sydney.

READ PARTICULARS OF THE NEW FROST LINES ON PAGES 4 & 5.



## SPECIAL

CRYSTAL CABINET SET complete with Phones, Aerial Wire, Insulators and Condenser. Guaranteed and Tested. Equal in Signal strength to Single Valve.

**Only £5 10s. Complete**

In Polished Mahogany Cabinet, All Parts Nickel Plated.

**Single Valve Set £10 complete**

**3 Star Crystal Detector Set, N.P. parts 2/9 set**

### ELECTRICITY HOUSE

387 GEORGE STREET

J. S. MARKS, 2 G R Manager



Masts, wood and steel, any size from 20 ft. to 200 ft.; Aerial Wire; Insulators; Spreaders; Ash and Metal Hoops, all sizes; Rigging Wire; Screws; Halyards; Anchor Pegs; Trucks, etc.; Wireless Cabinets, any design; Portable Poles and Aerials, a speciality. Flags of all Nations and designs.

Prices on Application.

**E. H. BRETT & SONS LTD.**  
LITTLE AVENUE. BALMAIN EAST  
Phone W 120



LEICHARDT AND DISTRICT RADIO CLUB SOCIETY.

There was a good attendance of members of the Leichardt and District Radio Society at the 91st general meeting, held at the club-room, 176 Johnston Street, Annandale, on Tuesday, July 29th.

The meeting was an enjoyable and instructive one, it having been decided before hand to conduct a "Questions and Answers" evening on this occasion. Mr. F. Thompson undertook to reply to any questions relative to wireless matters asked by those present, and with the assistance of Mr. H. F. Whitworth, gave a very good account of himself. The questions asked were many and varied, and it is doubtful if everybody present did not gain some useful knowledge during the evening.

Next Tuesday night the first of a series of new lectures as set out in the new syllabus will be delivered, when Mr. R. C. Caldwell will deal with the important subject of "Aerial and Earthing Systems."

Details of the new syllabus are as follows:—

- Aug. 12—"Aerial and Earthing Systems," Mr. R. C. Caldwell.
- Aug. 19th—Exhibition of Members' Apparatus.
- Aug. 26th—"Tuning Elements," Mr. F. Thompson.
- Sept. 9th—"Crystal Detectors and their Action," Mr. H. F. Whitworth.
- Sept. 16th—Debate by Members of the Society.
- Sept. 23rd—"Telephones," Mr. E. J. Fox.
- Sept. 30th—Open night.
- Oct. 14th—"Crystal Circuits and Their Construction," Mr. W. J. Zech.
- Oct. 21st—Interclub Debate.
- Oct. 28th—"Valves," Mr. F. Thompson.
- Nov. 11th—"Batteries," Mr. E. J. Fox.

Nov. 18th—Sale and Exchange evening.

Nov. 25th—"Radio-frequency Amplification," Mr. F. J. Lett.

Dec. 9th—"Audio-frequency Amplification," Mr. F. Thompson.

Dec. 16th—"Valve Circuits," Mr. F. Thompson.

Dec. 23rd—Social Evening.

With the commencement of the new syllabus comes an opportune time for the enrollment of new members, and persons interested in the activities of the Society are invited to communicate with the Hon. Secretary, Mr. W. J. Zech, 145 Booth Street, Annandale, who will be pleased to supply any information desired.

SYDNEY HIGH SCHOOL RADIO CLUB.

On 28th July the Sydney High School Radio Club held a loud speaker demonstration at the Turner Hall in the Technical College.

The demonstration was given by the Western Electric Co. and a four valve set was employed, with two large loud speakers. This arrangement gave ample volume to fill the whole hall.

During the course of the programme, Mr. Nangle, O.B.E., Superintendent of Technical Education,

should soon commence the construction of a set which could be used for experimental purposes, and for the testing of different circuits.

The last loud speaker demonstration was also discussed, and methods of increasing the finances of the Club gone into. The meeting closed at 3.45 p.m.

THE CROYDON RADIO CLUB.

The usual weekly meeting of the Croydon Radio Club was held at the club rooms, "Rockleigh," Lang Street, Croydon, on Saturday, July 26th, at 7.30 p.m., when all business on hand was rapidly discussed and attended to.

One of the club's most enthusiastic members, Mr. A. S. Ledger, exhibited his home-made buzzer set, and explained that it was very unnecessary to go to much expense for such apparatus.

Mr. C. W. Slade lectured on the "Construction of Loose Couplers," which proved very interesting and instructive.

The remainder of the evening was devoted to buzzer practice.

The meeting closed at 10 p.m.

All intending members are respectfully invited to communicate with the hon. sec., Mr. G. M. Cutts, "Carwell," Highbury Street, Croydon.

AUSTRALIA-ENGLAND TESTS.

Arrangements have been made by the N.S.W. Division of the Wireless Institute of Australia for tests between Australian and British experimenters.

The schedule is outlined below, and experimenters are requested to send particulars of results to the Hon. Secretary, Wireless Institute of Australia, Box 3120, G.P.O., Sydney, so that they may be officially forwarded to London.

Station.	Wavelength.	Time GMT.	Dates.	Call Up.
6 XX	115 metres	11.00 to 11.30	29/7 to 2/8 and 10/8 to 25/8/24.	VH 1 VH de G 6 XX
2 SH, 2 OD	85 to 110 metres	8.30 to 10.30	28/7/24 for 14 days.	AG or ZG
2 JF, 2 VF				de
5 FS and 5 KO				G 2SH-etc.

In both tests a code word will also be transmitted.

delivered a lecture from Farmer's studio to the meeting, and in general to the rest of the "listeners in," on Wireless, its use and advantages in education.

The demonstration was appreciated by an audience of over three hundred.

On 31st July, the Club held its usual weekly meeting, when the general business, etc., was discussed. It was suggested that the Club

BALMAIN DISTRICT RADIO SOCIETY.

At the usual weekly meeting held last Tuesday night, much important business was discussed and finalised.

The lecture on the Electronic Valve, its action and application to Radio is to be repeated at the next meeting.

All members and intending mem-

bers are specially requested to note that the next meeting of the Society will be held at 7.30 p.m. at "Riverina," 18 Clifton Street, East Balmain, near Nicholson Street Public School.

A fresh supply of membership forms are now available and any one requiring one is requested to write to the Hon Secretary, or to see him any evening after seven o'clock.

Tell your friends about "Wireless Weekly" where full details of the activities of this Society can always be found. Further particulars from—

PERCY G. STEPHEN, Hon Sec.  
18 Clifton Street,  
East Balmain.

**THE NORTHBRIDGE RADIO CLUB.**

The tenth general meeting of the club held at the club room, "Hoylake," Sailor Bay Road, Northbridge, on 30th ult., was largely attended.

After business arising from previous meeting and correspondence were dealt with, several new members were elected.

Arrangements were completed for a series of weekly lectures.

Mr. Forsythe gave a practical talk on "Aerials," including insulation and types of insulators. The speaker clearly explained the various kinds of aerials, their particular uses, advantages and disadvantages under different conditions.

The next lecture will be "Functions of Component Parts of Valve Sets." This being a very extensive subject will not, of course, be covered in one evening. Each part, such as valves, condensers, etc., will be the subjects of ensuing lectures.

The club meets every Wednesday evening at the above address. Will members please note the alteration? Experimenters and those interested are asked to come along. All particulars may be obtained from Hon. Sec. A. Cameron, "Ogilvie," Clanwilliam Street, Chatswood.

**THE STRATHFIELD AND DISTRICT RADIO CLUB.**

The 19th general meeting of the club was held at the club rooms on 31st August, Mr. Jacob being in the chair. After the minutes and reports from the various committees were received and dealt with, the meeting went into committee to consider the

Continued on page 44

# MICK SIMMONS LTD.

## Licensed Radio Dealers

It is with pleasure that we announce our prices for unassembled Crystal Sets. In doing so we ask you to compare our prices with others offering

Single Slide Tuner:		Loose Coupler Set:	
1 Large Cardboard Tube	0 6	1 Pair Tubes	1 0
2 Maple Ends at 1/-		1 Set Maple Ends	2 6
each	2 0	1 Maple Baseboard	3 0
1 N.P. Slider	3 0	8 ozs. Wire	2 2
4 ozs. Wire	1 3	1 Slider	3 0
1 Detector	2 9	9 Contact Studs	1 1
4 N.P. Terminals at 5d.		1 Piece Ebonite	1 6
each	1 8	1 Crystal	1 6
1 .001 Exd. Condenser	1 6	1 Detector Unit	2 9
1 Q.S.A. Crystal	1 6	4 Terminals (N.P.)	1 8
Aerial	5 5	1 .001 Phone Condenser	1 6
Ebonite	1 6	2 Slider Rods	2 0
		1 Slider Support	0 4
		1 Switch	2 3
		Aerial	5 5
	£1 1 1		£1 11 8

Expert instruction given gratis. Let us advise you on all construction matters. Quotations given for complete Crystal and Valve Sets

Remember our motto: "Quality consistent with reasonable prices"

# Mick Simmons Ltd.

Headquarters: HAYMARKET, SYDNEY  
THE WORLD'S GREATEST SPORTS STORE

## INSTRUMENTS USED IN RADIO SERVICE.

By H. A. Stowe, M.W.I.A.

(Continued from last week.)

### Moving Coil Instrument:

It is well known to most that a coil of wire carrying a direct current possesses a N and S pole depending on the direction of the current flowing through it. Also, it is well known that poles of like nature repel each other, and, unlike poles, attract each other. If, then, we combine these two laws we have the principle underlying the moving coil instruments. A small coil of wire is suspended between the poles of a powerful permanent magnet. The current to be measured or a known portion of it is passed round the coil, being lead into it and away by two fine hair-springs, which also act to keep the coil in a definite position when normal. Immediately current flows in the coil it sets up a N and S pole, which causes the N pole of the permanent magnet to repel the N pole of the coil, and so with the S poles; this causes the coil to rotate on its jewelled pivots against the action of the springs, the coil taking up a position where the strength of the field of the coil acting on the permanent magnets balances the pull of the springs. Any variation of the current flowing in the coil will cause a corresponding variation of movement of the coil, and also the pointer which is attached to the coil. The variation of the movements of the coil is directly proportional to the variation of the current flowing, hence a perfectly uniform scale is obtained. The movement of such an instrument as described may be adapted for measuring either current or potential. As the power necessary to move the coil is exceedingly small, resistances and shunts are employed for potential and current measurements respectively. In the average make of moving coil instrument only from 1 to 5 M/A are required to move the pointer over the full scale. Knowing this value we can easily calculate the resistance necessary to put in series with our instrument to measure any voltage. Suppose, for instance, our moving element was rated at 3 M/A for full scale deflection, and we wished to measure, say, 10 volts at the extreme end of scale, then the resistance necessary in series with the instrument would be  $10 \div 3 = 3.333$  ohms;

003 amps. would then be the current our instrument would take when measuring 10 volts. For current measurements shunts are employed, and the voltage necessary to operate the moving coil is taken into consideration. In most moving coil instruments this value is approximately 100 M/V. So then if we wish to measure, say, 10 amps. at the extreme end of scale, we must construct a resistance of such a value that when 10 amps. are flowing through it the voltage drop measured across the extreme ends of the resistance will be 100 M/V, and in this case will be  $10 \times 10 = 100$  ohms. So that in this case the increase in resistance in the circuit is very little, hence the loss is very low. From this it will be seen that this type of movement may be used over unlimited ranges on Direct Current. It will be seen that if alternating current is applied to the instrument, the polarity of the coil will reverse with the reversals of the current, and so the needle will simply vibrate at the zero position.

### Moving Iron Instruments:

If two pieces of iron are magnetised by the same magnetic field, both will have the same polarity at the same ends, and if close together will tend to repel each other by the action of "like" poles. If, now, the magnetising field be produced by a coil carrying a current and one of the pieces of iron be fixed rigidly within the coil and the other be suspended parallel to the fixed piece within the coil also, in such a manner that it swings in a circle the centre of which is inside the coil, the stronger the field the farther will the pieces of iron be separated. This is the principle of the moving iron types of instruments. The piece of "moving iron" is controlled by a spiral hair-spring mounted on the spindle, to which the iron itself and the pointer is fixed. The current to be measured is passed round the coil. From this it will be seen that, as there are unbalanced forces at work within the movement as the iron moving piece is repelled against the action of gravity or of a spring, a relative large amount of work has to be done in moving it, and also the farther the piece of iron swings from the piece

repelling it the greater is the amount of work to be done, that amount increasing as the square of the distance between them. From this it will be seen that a relatively strong field must be produced by the coil, which field is proportional to the amps x turns or the ampere-turns. Therefore, the smaller the current to be handled or measured the greater the number of turns to produce the necessary field. So that a small capacity ammeter has a large number of turns, which indicates a relatively high resistance which will be in series in the circuit.

If, now, in a voltmeter we wish the current consumed by the instrument to be small when connected across the lines, our number of turns must be very large, and as this is inconvenient to any large extent on account of mechanical reasons, a somewhat larger current is used to compensate for the loss in turns. In high voltage instruments only a small portion of the voltage can be impressed on the coil, so that resistances must be used of such a capacity to carry the current necessary for the operation of the instrument. As the power necessary to move the element varies as the square of the distance, it follows that the scale will not be uniform, but will tend towards crowding at the zero end. This is what is known as a tangent scale. These instruments are practically as correct on A.C. as on D.C., if well made.

In conclusion, a word might be said on making the most of our instruments or getting the most out of them. From this paper it will easily be followed, particularly with moving coil instruments, how one meter may be made to do dual purposes. If we purchase, say, a 100 M/A ammeter (moving coil), from the figures given we can construct a number of resistances to use in series with the instrument, and so use it as a voltmeter with several ranges; also we may construct several shunts of correct value and capacity, and so use our instrument as an ammeter of various ranges, and it only needs a little ingenuity to mount the instrument in a small case complete with both its potential resistances and current shunts, and pro-

(Continued on Page 48.)

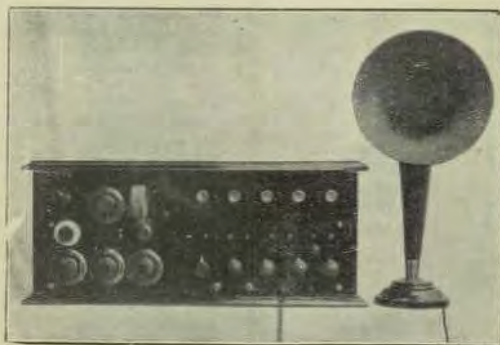
## RADIO IN THE HOME



Every tone, every note clear and sweet. You can almost see the musicians swaying in time to the music. It's just as if the orchestra was right in the room with you.

"COL-MO" Broadcast Receivers are the last word in sensitivity, selectivity and simplicity. You need only to switch on the valves and set the dials for the station you want. The cabinet is of highest finish mahogany or walnut, and includes compartment for dry batteries.

The COL-MO is the ideal Radio Receiver for the home.  
Crystal Sets, complete with Phones, Aerial Wire, Insulators, £3/10/- and £5.  
Valve, complete with all Batteries, Phones, Loud Speaker, Aerial Wire, £14 to £75



### Radio Broadcasting

*Solves Your Home  
Entertainment Problems*

**The Colville-Moore Wireless Supplies Ltd.**  
10 ROWE STREET, SYDNEY

Phone : B2261. Sales and Office.

Works : B1721

## SECRETARIES OF LIVE CLUBS



LEFT  
Mr. W. L. CARTER  
Railway and Tramway  
Radio Association

RIGHT  
Mr. W. J. ZECH  
Leichhardt and District  
Radio Society

Both these Clubs have  
affiliated with the Wire-  
less Institute of Australia



### D.X. 2.B.B.

THE following stations have been logged using one valve by Mr. E. B. Crocker, of 38 Roseby Street, Marrickville.

Victoria.	New Zealand.	N.S.W.
3BD.	1AA.	2CR.
3BH.	1AC.	2CH.
3BL.	1AO.	2HM. ('Phone.)
3FH.	1AX.	2GQ. ('Phone.)
3LM.	2BH.	2GN.
3BU.	2KA.	
3DB.	2AF.	
3HL.	2AD.	S. Australia.
3BM.	2AW.	5BQ. ('Phone.)
3ES.	2AQ.	5BD.
3GB.	2AT.	5DO.
3SL.	2AE.	5AD. ('Phone.)
3HH.	2AP.	
3WN.	2AC.	Tasmania.
3GQ.	2FA.	7AA.
3XF. ('Phone)	3AR.	7AK.
3BQ ('Phone.)	3AD.	
3OT.	3AP.	Queensland.
3ZR.	3AL.	4CK. ('Phone.)
3XO.	4AA.	4EG. ('Phone.)
3HH.	4AP.	4CM.
3VI.	4AR.	America.
3JP.	4AK.	6CGW.
3BP.	4AD.	KGO.
3TM.	2AX.	
3BL.	4AR.	
3DD.		

### TO OUR READERS.

For many months we have conducted an advisory service free of all charge. The questions asked us cover practically every part of the broad field of wireless. "What is the wavelength of NPM?" "What is a suitable four-valve receiver?" "How is wavelength calculated?" These are samples of the subjects upon which we are called upon to advise.

Now, it has been both a pleasure and a privilege to have been able to assist readers with their little wireless troubles, but it will be readily appreciated that the drawing of circuits, calculation of problems, etc., eat a very large hole in the time we have at our disposal; we are in many cases put to expense in looking up records, etc. In fact, our advisory service entails a financial loss, which is increasing every week, and which on account of the proportions it is assuming, we can no longer carry on, in looking up records, etc. Inquiries which call for detailed information or the drawing of circuits must be accompanied by a postal note or stamps to the value of 1/-. This will just about meet the cost. To our subscribers, of course, the same free service will still be carried on.

## DAVID JONES'

# for all RADIO EQUIPMENT

### at moderate prices.

With wireless reception assured, the building of private Radio sets has become tremendously popular. The best of expert advice is obtainable at David Jones', and an extensive stock comprising the best makes of wireless apparatus priced with moderation. Also sets are built to customers' requirements by Radio experts. The efficiency of David Jones' Wireless Sets is well demonstrated by the great number now in constant use throughout the country.

Earthing Switch, D.P.S.T. Price 3/6  
 Flex Wire, Price, foot . . . . . 2d.  
 Grid Leaks, a large variety, Price from 1/6 to 12/6.  
 Hydrometers for testing your battery. Price . . . . . 6/6  
 Insulators. Price . . . . . 4d. to 2/6  
 Insulating Tape. Price, reel . . 6d.  
 Inductance Switches. Price 4/6, 13/9, 15/-.  
 Jacks, Double Circuit and Single Circuits. Large assortment. Popular Prices.  
 Filament Control Jacks, K.C. Price each . . . . . 4/6  
 Lamp Sockets. Twin. Price, each 7/-  
 Loud Speakers. Magnavox. Price £10/10/-.  
 Magnavox, with 2 step amplifier, 18in. Horn. Price . . . . . £29/10/-  
 With 2 step amplifier, 14in. Horn. Price . . . . . £26/10/-  
 Amplions. Price . . . . . £5 to £9  
 T.M.C. Price . . . . . £9/10/-  
 W. E. Junior. Price . . . . . £2/19/6

**Loud Speaker Units:**  
 Baldwin Special. Price . . . . . £2  
 Amplions. Price . . . . . £4  
 C.T.C. Price . . . . . £2/10/-  
 Grodan Horns. Price . . . . . £1/10/-  
 Lightning Arrestors. Price, from 5/6 to £1/2/6.  
 Loose Coupler Parts. Price . . . . 4/6

**Head Telephones:**  
 T.M.C. Price . . . . . 35/-  
 Baldwin Type F. Price . . . . . £5/5/-  
 Baldwin Type C. Price . . . . . £3/17/6  
 All other popular types in Stock.

**Tools:**  
 Pliers, large round nose, Price . . 5/-  
 Small round nose. Price . . . . 4/6  
 Flat nose. Price . . . . . 5/-  
 End Cutting. Price . . . . . 7/6  
 Small cutting. Price . . . . . 6/-  
 Insulated Linesman's. Price . . . 9/-  
 Side cutting. Price . . . . . 5/6  
 Duckbill. Price . . . . . 4/6

**Plugs:**  
 Sure Grip. Price from 5/- to 9/-  
 Panel H.C., Remler No. 43, Price 6/6.  
 Panel H.C., Remler No. 42, Price 4/3.  
 Potentiometers. Price from . . 10/6  
 Rheostats. Price from 4/- to 10/6  
 Switches. All types for every purpose.  
 Sliders. Price . . . . . 3/-  
 Transformers (A.F.) Price from 25/-  
 Transformers (R.F.) Price, from £1/10/- to £2/2/6.  
 Valves. All well-known makes, including the famous C-301A and 6-299.  
 Valve Sockets. Price, from 2/6 to 8/6.  
 Wave Traps. Price, each . . 45/-

## DAVID JONES'

RADIO DEPT., 252 YORK STREET, SYDNEY

## BRINY REMINISCENCES.

By Brasso.

(Continued from Last Week.)

There was something about those S. O.S. calls that seemed to send cold chills down my back. Ship operators who have kept a night watch in the submarine zone will remember the feeling. The clamour and crash of traffic from dozens of stations along the British coast and from warships on the high seas—then as suddenly as though a blanket had been thrown down, an eerie silence—the stillness of the grave—and then sharp and clear-cut—the swift note of a Marconi Rotary Gap—“S.O.S.—S.O.S.—S.S. Indian Prince”—Lat 5642, N. Long. 0246 W. Torped ord. Sinking rapidly. Come quickly.” A few rare seconds of dead silence and then from the Lizard (C. L.D.) the flying hand of an operator speeding out the C.Q. call, warning all vessels—and somewhere a swift “R” from a cruiser rushing to the rescue.

fire and vengeance on the whole Teutonic race. The officers on watch probably nursed the same feelings towards Johnny. However, next morning broke fine and fair, with a blue sky overhead—to the west the wide Atlantic—to the east and almost within hailing distance the Spanish coast, dotted with villages here and there.

A galaxy of coast stations, situated at short intervals up the coast from Gibraltar to Ushant, work on 600 metres, and what with the booming note of E.A.C. (Cadix), E. A. P. (Cabo Palos) and the smaller power stations of Portugal, combined with the notes of many neutral ships, the ether was a hustle and a flurry the whole of the daylight hours. A constant stream of ships of all nationalities passed close abeam

power Telefunken stations working on 1200 metres kept up a continuous stream of traffic ala Espagnola all day long. The Spanish possessions over in Morocco are continuously in touch through E.A.B. (Barcelona) and I became quite accustomed to listening to messages addressed to General Fernando Puiz, Y. Innocenzio, or some such high-standing title. Possibly my sense of humour may be somewhat acute, or maybe distorted; but the Spanish and the Portuguese languages have always seemed to me to be inexplicably pompous and flowery, and on occasions when I have listened to long-winded conversations between operators on ships of those nationalities, I have always been possessed of an insane desire to shriek with mirth at the impressive “Gracias,” “Senores,” and what-nots they hand along to each other. Remarks passed between British operators are usually short and to the point, partly due to the fact that unofficial remarks are not allowed and partly because the operators are seldom given to windbagging—but those Spanish and Portuguese boys sure did chew the fat. Just at the close of the last Portuguese revolution (the last one, unless any have slipped me, was, I think, in 1920) I happened to be passing at sea off Lisbon some hours after the Republican forces had successfully thrown the last lump of coal at the monarchist lads, and the latter took to the woods defeated. The Government, via the medium of P.Q.P. Lisbon (a very efficient 5KW station erected by the Marconi Company in 1917) were telling the world the glad tidings. In the most howlingly funny English a long C.Q. message finished up in a final burst of eloquence: “Viva Le Republique Portugaise,” “Viva L’Allies,” “Vive L’France,” “Viva L’Italia,” “Cheerio.” Having once witnessed a bull fight at Barcelona, I could easily picture the populace of Lisbon thronging the Piazza Republica shouting “Viva” and warbling patriotic songs to beat the band.

However, let us to our onions and taters. The burning question with all hands on board the



Twenty Minutes After Being Torpedoed.

And in a few moments, as if by magic, the air was again filled with messages and traffic was in full blast again as though nothing had happened. There was something sinister and terrible about the whole business which somehow took the glamour and excitement away from it. Months later, when I sat in pitch darkness pounding out the S.O.S., while friend Hun took pot shots at the wireless cabin, I realised there was no glamour about it at all and that the whole thing was just a sordid, dirty business, devoid of everything except the burning question of “how can I save my skin?”

The news of the four S.O.S. calls fanned the flame of hatred for the Hun in the breast of Johnny Buchanan, and all that night he stumped up and down the bridge in his carpet slippers foaming at the mouth, and breathing

going south—while others were slowly overhauled by us—others again crept steadily up on us from astern, and gradually passing us in a couple of hours were hull down ahead. Next to the Western Ocean, this thousand mile stretch from the Channel to Gib is the busiest sea lane in the world and as, at that time, traffic had not been diverted to avoid the danger zone, the panorama of ships and yet more ships was one which held me enthralled—and the romantic coast of Spain sliding gently past on the starboard beam afforded me ample material for long periods of study through the narrow end of an excellent German telescope.

Spain is a nation evidently given over to much military activity, and a chain of very efficient high

READ PARTICULARS OF THE NEW FROST LINES ON PAGES 4 & 5.



"Bakara" was: "What will the Bay be like?"—all hands, that is, save yours truly. All my life I had nursed a secret passion to experience the wildest storm ever staged by that famous pond, the Bay of Biscay. And by the great horned toad, we got it—and I was cured. I didn't eat a square meal for two days.

Rounding Cape St. Vincent we struck a howling, roaring north-west gale, accompanied by fierce squalls and great white capped rollers which swept the old home from stem to stern. With both feet braced against the bulkhead, I kept a dismal watch and glumly surveyed the pictures careering up and down the wall as the "Bakara" nobly endeavoured to stand on her left ear.

Captain Frank H. Shaw, Marritt and a few hundred others have described the Bay of Biscay in a storm, so I won't attempt it—except to say that those writers merely toyed with the subject—they dwelt upon it far too lightly. One of the most impressive sights of my life was that of a Clan liner zooming past in a smother of foam with only the mast tops and the two red rings around the funnel visible. Great creamy seas burst over her bows continually as she was literally smothered with water.

The meals in our saloon were filled with a grumpy silence except for Johnny, who chuckled and crowded over the beautiful manner in which his ship was behaving. As a terrific sea crashed over the bow and she went up like a rocket and then down with a violent bump, he literally beamed upon everybody and remarked: "Took it like a bird." The steward, staggering on a zig-zag course between the table and the pantry, flirting with a crockery disaster at every step, no doubt entertained similar sentiments. Between meals, Johnny B. stumped cheerily up and down the bridge humming snatches of chanteys and showing a deep sense of the joy of living. Night descended with the blackness of Hades and no words could describe the diligence and patience with which I chased the elusive catwhisker which with every roll of the ship, slid off the crystal. At 10 p.m. cocoa and dog biscuits were toted up by the burly night-watchman to the officer on watch and myself, and when I heard a

horrid crash and much profanity from the foot of the ladder, I had a dim feeling that someone had blundered.

The nightwatchman and I had long ere this become chummy—and here let me say to those budding ship operators, that I found that it always paid to be chummy with the sailors. If you can hit that democratic spot where you can call them "Ginger," "Bluey," "Die Hard," etc., and yet retain their respect, you have struck the sure roads to success. Once they see that you don't put on "dog"



The Bakara's Wireless Installation.

and it gets around that you are a good fellow—well, I have a fine sea chest, a nicely worked ditty bag, and several other nick-nacks which I prize as relics of my sea-going days—and which were presented to me out of genuine appreciation of the little actions which were so easy to perform and yet meant so much to them. My years at sea only served to strengthen my affection and regard for these horny fisted, hard living sons of the wide oceans, and I scarcely ever struck a ship where they wouldn't cheerfully turn out to give me a lift ashore with my bags—or a hand with the aerial when it needed an over-

haul, or when it came careering down on deck.

Yes, the nightwatchman was peevish and commenting luridly upon things in general, dumped the cocoa on the table and departed with many rumblings. At 11.30 p.m., three S. O. S. calls came through from foundering steamers, but as they were a considerable distance away, the "old man" held on his course. What happened to them I never discovered, as it was difficult to pick anything consecutive out of the babel of sounds in the ether. French, Spanish, and British coast stations hammered away ceaselessly, with a medley of notes that begged description. Warships, trawlers, patrols and neutral merchant ships yelped and barked and boomed hour after hour, and hanging on grimly to my bucking steed, I marvelled at the amount of traffic passing back and forth. At intervals the swift note of G.L.D. (The Lizard) rushed out a couple of dozen calls and with a roar, B.Y.W. flashed a code message to some ship of war.

(To be continued)

QUESTIONS AND ANSWERS.

F.C.C. (Dubbo): The length would be 80 ft. Take your lead-in from the end.

Lady: "Jackson, I'm sorry to hear your wife got a divorce."

Jackson: "Yassum, she done gone back to Alabama."

Lady: "Who will do my washing now?"

Jackson: "Well, mum, I've co'tin' again, and I co'ts rapid."—"Path-finder."

Skin—"Why all the puffing?"

Flint—"I'm all tired out. There was a fight out there and I was running to stop it."

Skin—"Is that so? Who was fighting?"

Flint—"Me and another guy."—Puppet.

Eng. Prof.: "How would you improve this sentence, 'While attending a sleighride party in a soft drink place, Joseph Wiznowski was shot in the abdomen'?"

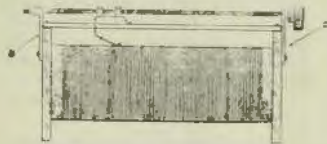
Bright Stude: "While attending a sleighride party, Joseph Wiznowski was shot in the soft drink place."—"Bliss."

READ PARTICULARS OF THE NEW FROST LINES ON PAGES 4 & 5.

## A Simple Vernier Slider

*A Useful Variable Inductance embodying some novel details of construction.*

THE chief drawback with the ordinary inductance slider with spring plunger is its somewhat clumsy movement. To ensure good contact with the coil, the tension of the spiral spring is essentially great, and in time the coil becomes worn and useless. A flat spring is in every way more reliable and efficient, and the simple slider described below has an additional advantage of permitting a very fine adjustment.

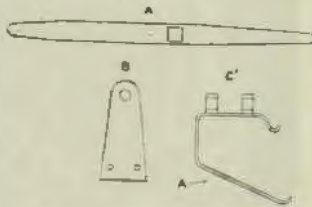


The cost of constructing this should present no difficulty it being only necessary to purchase a length of serewed 2 B.A. brass rod, four 2 B.A. nuts and an ebonite knob. The remaining parts can be made from odd pieces of metal usually to be found lying about the workshop.

No dimensions are given, as these will depend entirely on the size and general arrangement of the existing coil. The square brass rod used in conjunction with the ebonite slider is retained, and used as a guide rod to engage the square hole in the spring-brass strip A. This is bent to the shape shown at C. Solder on two of the nuts as shown, about 1/8 in. apart, and see that their diameters are in a direct line, and that the serewed rod will move freely and smoothly through them. From a piece of sheet brass about 1/4 in. in thickness, cut out two bearings as shown at B. The hole at the top should be drilled slightly larger than the diameter of the serewed rod, and the two smaller holes to take fairly stout wood-screws or small bolts.

A small spacer washer is placed

between the outside of one bearing and the inside of the ebonite knob, final adjustment of the rod then being effected by means of two nuts at the opposite end, arranged as lock-nuts by serewing one hard against the other, allowing sufficient play only for the rod and knob to revolve freely.



The upper point of the slider makes contact with the top surface of the square brass rod, thus permitting a connection from one end of the rod in the usual way, and the lower point makes a good smooth sliding contact with the coil.

The general arrangement of this unique little slider mounted on the coil, is indicated at D. If desired, a handle can be fitted in place of the knob.

(Continued from Page 21.)

First of all slip the primary windings on one leg, and next slip the two secondary pies on the other leg with a piece of mica-ite on each side, and one in between the coils. With the last look, see that all the windings are O.K.—making sure that the secondary coils are running in the same direction. The fourth leg of the transformer is placed in again. The best way to do this is to slip each piece of iron separately until the whole of the two inches are packed into place. This transformer is so designed that the voltage drop per turn is .25 of the volt, so that should the builder desire to alter the voltage of any of the windings, this is simply accomplished by allowing 1/4 volt for every turn put on, provided of course

that the sum of the products of voltage and amperage of each winding does not exceed 390, this being the total input of the transformer on full load. For instance—if it is desired to use Kenetron Rectifiers instead of Phillips Rectifiers, the rectifier winding will have to be altered to give 10 volts 5 amps, which is 50 watts, compared with the original winding of 5 volts 22 amps, (110 watts,) so it may be seen that this would not overload the transformer in any way.

Now one more word. The cost of the transformer would be about £4 at the most, and the quantity of wire required for primary winding would be about 6 1/2 lbs., and the high tension winding about 5 1/2 lbs.

### Wireless Weekly SUBSCRIPTION RATES

Single Copies . . . 3d. net  
12 months (52 issues), 13/-  
post free.  
6 months (26 issues), 6/6,  
post free.

All communications to be addressed to the Editor, "Wireless Weekly," 33 Regent Street, 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.

After a hopeless round of dubbing, one discouraged golfer said to another:

"Do you know, old boy, I believe my whole trouble is that I stand too close to the ball when I drive?"

"Oh, no!" replied his friend. "Your trouble is that you stand too close to it after you drive."—"Judge."

Yachtsman: "If this squall continues I shall heave to."

Passenger (wanly): "What a horrid way to put it."—"Bystander" (London).

## "RAMSAY" RADIO SUPPLIES

You cannot buy better :: Everything for the Amateur

<p>Maple Base Boards . . . . . 3/3                  Maple Loose Coupler Ends, Set of 4, . . . . . 2/6                  Contact Stops, N.P., per doz. . . . . 1/-                  Contact Studs, N.P., per doz. . . . . 1/-                  Runner Rods . . . . . 10d.                  Sliding Contacts, brass . . . . . 1/6                  Sliding Contacts, N.P., . . . . . 2/3                  Crystal Detectors, Mounted . . . . . 3/3                  Crystal Detectors, N.P., unassembled . . . . . 3/-                  Crystal Detectors, glass enclosed, mounted, 5/6                  Crystal Detectors, glass enclosed, unmounted, 4/2.                  SPDT Knife Switches on Porcelain Base, 2/9                  DPDT Knife Switches, on Porcelain Base, 4/6                  Valve Sockets, R Type . . . . . 2/6</p>	<p>Valve Sockets, Radiotron Type, . . . . . 4/-                  Dry Cell Valves, 1½ volt . . . . . 27/6                  Jefferson Transformers, No. 41 . . . . . 30/-                  Jefferson Transformers, Star . . . . . 25/-                  Murdoch 3,000 Head Phones . . . . . 30/-                  Murdoch, 2000 Head Phones . . . . . 25/-                  Winding Wires, all sizes in stock.                  Aerial Wire, 3/20 . . . . . 2/0 per 100ft.                  43 Variable Condensers . . . . . 18/6                  Primary Tubes Wound . . . . . 3/6                  Secondary Tubes, Wound and Tapped . . . . . 6/-                  Crystal Receivers, Panel Mounted . . . . . £2/5/-                  Single Valve . . . . . £7</p>
--	---

Write for Catalogue, W 16.

**RAMSAY SHARP & COMPANY, LIMITED**  
 RADIO ENGINEERS 217 GEORGE STREET, SYDNEY.

*OUR SPECIAL  
 LINE  
 PEERLESS  
 Head Phones*

2000 Ohms.  
**32/6**



"REFLEX" Loose Coupler Receiver  
**£3-15-0**

Complete Set of Parts to make the above Set 36/6  
 Postage 1/6

**RADIO HOUSE**  
 619 George Street, Sydney





### K. & C. Rheostat for Every Tube

In using the new type radiotron tubes successful operation depends largely on having sufficient resistance in the filament control. Not only is this necessary, but it should be of quiet smooth operation. In the operation of some circuits weak signals are completely beyond the scope of the receiver, due to the inability of the rheostat contact to smoothly bridge two windings on the resistance. All of these points were given careful consideration on the design of K. & C. rheostats. K. & C. rheostats come in four resistances.

Type FR2 for UV200 and WD11 and 12 tubes, 6 ohms	7/3
Type VR2 (vernier) for UV-200 (Detector) tubes	10/-
Type FR4 for UV-201-A and 301-A tubes, 20 ohms	8/6

(The FR4 is also the best to use for UV-199 tubes when operated with three dry cells.)

Type FR5 for UV-199 and 299 tubes when six volts battery is used, 60 ohms .. 8/6

**PACIFIC ELECTRIC CO.,**  
87 Clarence Street, Sydney

YOURS FOR EVERYTHING ELECTRICAL

**O'SULLIVAN'S ELECTRIC SHOP**  
296 PITT STREET, CITY

### Great Clearance Sale of Electrical Goods

To make room for Wireless supplies. Do not fail to see my window display. All Wireless Accessories Stocked.

## All-British

Powerquip  
Intervalve  
Transformer

Over 60,000 in use  
in Great Britain  
Guaranteed  
12 months.



Ensure good  
results

PRICE — 25/-

Obtainable at  
W. HARRY WILES,  
HARRINGTON'S LTD.  
RAMSAY, SHARP & CO.,  
LTD.  
COLVILLE MOORE WIRE-  
LESS SUPPLIES, LTD.  
DAVID JONES LTD.  
MARK FOY'S LTD.  
N. P. OLSEN, NEWCASTLE  
J. C. PRICE, BRISBANE, Q.

**LEFAX** Perpetual Radio Handbook **25/-** Distributed by Welbo Radio Co.  
13 Royal Arcade, - - SYDNEY

ADVANCED WIRELESS—

## American Broadcasting Clearly Heard

Special Crystal Receiving Set, complete with Head Phones and all Accessories, installed and adjusted in your house for - £5 10s.

8,000 miles on 2 Valves—HOW?— Demonstration and Advice.

## FINCH'S WIRELESS STORE

Everything Wireless and Electrical

471 PITT STREET, SYDNEY (Opp. Hotel Sydney)

(Continued from Page 33.)

proposed new rules and bylaws. After considerable discussion the meeting resumed, and the order of rules, etc., given effect to by an unanimous vote of the members.

Under the new rules the management of the club is now in the hands of a general committee, so that the weekly general meeting is now done away with, and Thursday night in future will be devoted to practical work, lectures, etc. This, with Tuesday night buzzer practice, keeps the members fully occupied during the week.

Four new members were secured last week, which brings the total up to well over 40, and for the benefit of intending members it is pointed out that the subscription to the club is 2/6 on joining and 1/- per month, which is very low considering the facilities that are offered members.

Other inducements offered intending members are the facts that the club has one of the best rooms in the State, fitted with machinery for the use of members who are capable of using it, and that a class will be starting shortly by an expert on fine wood-working. This is open to members of the club. It is the intention of the club to make every member familiar with the Morse code up to any speed desired. This can only be done by constant practice, and it is advisable to start now. A prize will be awarded next December to the member who, starting now, becomes most efficient in the code.

Within two months it is expected that the five-valve set will be completed, so that members can then get on to practical work.

The social side is looked after as well as the wireless side, and social evenings and launch picnics, etc., are features of the Strathfield Club's activities. Every encouragement and assistance is given to new members, as it is realised that the more members there are the more good work can be done.

The club rooms are situated at the corner of Albert Road and Duke Street, Strathfield, and Secretary M. Wraxall, "Almor," Long Street, South Strathfield, will be glad to give any further information.

(Continued from Page 29.)

however of what may be termed the unofficial test, the call letters used by the A.R.R.L. will be used.

In order that as much notice as possible should be given amateurs over

here, I notified the Wireless Institute in Victoria, while a letter to Mr. Phil Renshaw ensured that those in N.S.W. and Queensland would receive the earliest possible intimation of what was afoot.

There are two other items which may be of interest, the first is that during my stay in England I went rather thoroughly into the question of the choice of an International Auxilliary Language in relation to radio, and found that the British radio press and societies were generally in favour of Esperanto. I also discussed the matter with the secretary of the British Esperantists association, and found that they had the matter in hand and already published special radio numbers and articles in their official organ "International Language." I also received from him quite a number of articles and pamphlets on radio which were printed in this language. I also had the privilege of seeing a letter from Mr. K. B. Warner, who stated that owing to the amount of correspondence in favor of Esperanto evoked by his original circular letter on the subject, the A.R.R.L. had decided that they would drop their suggestion that "Ido" should be auxiliary language chosen.

The second item likely to be of interest concerns radio conditions in Ceylon, and I am sorry to say that Ceylon will not for some time yet be

to the West what New Zealand is to the East. Colombo certainly boasts a Radio Club of some 70 members but it was formed not for the dissemination of wireless knowledge but as a means of bringing pressure to bear on the Government and so obtain regulations relating to broadcasting and the amateur use of wireless apparatus. Having achieved its primary object it decided to remain dormant, holding but one general meeting a year, and such committee meetings as were rendered necessary. Possible now that the Government has sanctioned a Broadcast Station for Colombo it may develop into a Radio club in the true sense of the word, and we may hear further from amateurs in that country.

P. B. C. HOLDSWORTH.

Special Notice.—All experimenters please note the time of operation of the British experimental stations is p.m. and Greenwich mean time. The corresponding time in New South Wales is exactly ten hours earlier.

When you get results kindly advise me at once. Look out specially for the Code Words.

This can be done. Who will be first with their log? Communications should be addressed to me at Box 3120 G.P.O., Sydney.

PHIL RENSHAW,  
Hon. Sec., W.I.A.

### Reproduction of Telegram Received by United Company



X 46 CLIFTON & 25 2/1 5-14 28 TH

UNITED DISTRIBUTERS CO  
CLARENCE ST SYDNEY

LOGGED K & D CLEARLY LAST NIGHT FOR HOUR AND  
QUARTER USING YOUR SINGLE VALVE HOME ASSEMBLY

CHAS WALKER +

*For Perfect Reception Use*

# GILFILLAN Radio Parts

---



R 675

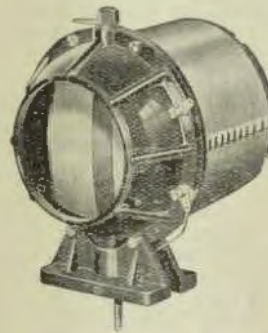
**VARIOMETER**

Embodying the highest electrical efficiency. Moulded brown bakelite, split bronze bearings.

If you want most satisfactory results use "Gilfillan" parts in your Radio set. Accurately made of finest materials in accordance with the latest scientific standards.

Have your dealer show you Gilfillan Radio Parts. A few of them are illustrated here. You'll find them to be just what you want — and extremely low priced for quality construction.

Dealers: Gilfillan Radio Parts offers a splendid merchandising opportunity.



R 1125

**VARIOCOUPLER.**

The finest that can be produced. Moulded brown bakelite, split bronze bearings; winding tapped at 15 points for very close tuning. Obtainable in two sizes.

---

See Gilfillan Parts at the Brisbane Show  
AUGUST 9th to 19th, 1924



# Radio Company

Limited  
15 LOFTUS STREET  
Circular Quay  
SYDNEY



### LOOSE COUPLER CRYSTAL SET.

130 to 1200 Meters.

1 pair Cardboard Tubes . . . . .	1 0
1 Set Ends . . . . .	2 6
1 Base Board . . . . .	2 6
8 ozs. 24 Enamel Wire . . . . .	2 9
1 N.P. Slider and Bar . . . . .	2 6
12 N.P. Contact Studs . . . . .	1 0
2 N.P. Switch Stops . . . . .	0 4
1 N.P. Inductance Switch . . . . .	2 0
1 piece Ebonite . . . . .	1 6
1 N.P. Detector Unit . . . . .	3 3
1 Guaranteed Crystal . . . . .	1 6
1 each Aerial and Earth Terminals . . . . .	0 10
1 Phone Condenser . . . . .	2 0
2 Secondary Rods . . . . .	1 6
1 Slider Support . . . . .	0 4
1 yard Flexible . . . . .	0 3
Aerial Equipment . . . . .	7 6
	<hr/>
	£1 9 7

### HEAD PHONES.

Murdock's 3000 ohm . . . . .	30 -
New System Telephones, 4000 ohms . . . . .	35 -

Trimm's, Dependable . . . . .	32 6
Trimm's, Professional . . . . .	45/-
Baldwin's . . . . .	80/-

### COMPLETE CRYSTAL SETS.

Complete, ready for installing, from  
£2 10 -.

### SINGLE SLIDE CRYSTAL SET

150 to 1200 Meters

1 Impregnated C.B. Tube . . . . .	0 6
2 Ends . . . . .	1 6
4 ozs. 24 Enamel Wire . . . . .	1 6
1 N.P. Slider and Bar . . . . .	2 6
2 N.P. Terminals, Aerial and Earth . . . . .	0 8
1 N.P. Detector Unit . . . . .	3 3
1 Guaranteed Crystal . . . . .	1 0
2 Extra Phone Terminals . . . . .	0 8
1 piece Ebonite . . . . .	1 6
1 Phone Condenser . . . . .	2 0
Aerial Equipment . . . . .	7 0
	<hr/>
	£1 2 1

We are also open Friday Nights until 9 o'clock

**RADIO CO., LIMITED**  
15 LOFTUS STREET, CIRCULAR QUAY, SYDNEY



PERSONALITIES IN AUSTRALIAN WIRELESS WORLD



MR. D. CAMPBELL,  
Construction Engineer, Amalgamated Wireless (A/sia) Ltd.

FEW men, especially in Australia, can claim to have been associated with wireless activities for such a long period as Mr. Campbell. On the inception of experimental wireless in H.M. Navy in England in 1898, Mr. Campbell, having had an electrical training and being Chief Signal Instructor at Portsmouth Signal School, was one of the first detailed to carry on experiments in connection with the new method of communication. At that time the wireless duties associated with the position were only of a secondary nature. In 1903 Mr. Campbell was appointed to the H.M.S. "Caesar," Flagship of the Channel Fleet, then under the command of Lord Charles Beresford. The ship's wireless equipment consisted mostly of coherers, leyden jars, jiggers, condensers, and magnetic detectors,

supplemented in the words of Mr. Campbell by "plenty of confidence." A daylight range of 50 miles was then considered good. Later he was attached to the Royal Yacht for the summer cruise, and at the end of that period joined the H.M.S. "Powerful," and so journeyed to Australia. Two years later he returned to England, took charge of the wireless section of the Naval Signal School at Portsmouth, and remained there until, having completed his service, he left for Sydney in 1909. The following year he joined up with the Australasian Wireless Company, taking charge of the workshops and the maintenance of ship stations. Two years later he was engaged in the construction of the Pennant Hills Wireless Station, and was afterwards installing engineer in the erection of

the Awanui and Awarua Coast stations built for the New Zealand Government.

On the absorption of the Australasian Wireless Company by Amalgamated Wireless (A/sia) Ltd. in 1914, Mr. Campbell was appointed Equipment Manager in charge of ships' installations and maintenance.

During the last ten years Mr. Campbell has been engaged on many important and highly interesting wireless jobs, viz., the preparation and installation of stations at Macquarie Island and Adelia Land in connection with the station at Garden Island for the Dr. Mawson's Antarctic expeditions; Navy; the coast station at Nukualofa for the Tongan Government; the motor launch "Wattle" for Dr. Campbell Brown's New Guinea expedition; and the equipment for Captain Hurley's New Guinea expedition.

Mr. Campbell was also responsible for the constructional work in connection with the Broadcasting Station "2.F.C." erected by Amalgamated Wireless (A/sia) Ltd. for Messrs. Farmer and Co., Sydney, and is at the present time engaged in the erection of the new Broadcasting Station at Braybrook, Melbourne.

Very Raw Beginner (questioned on his new receiver): "Work? Too right it did. I didn't get any music at all, but it worked—because I got the engaged signal."

STATIONS HEARD.

Victor G. Swanson, "Boomerang," Piper Street, Kyneton (Vic.), sends us his D.X. report. He wants those mentioned to regard this as his Q.S.L., and will be glad to communicate with any who may wish to get in touch with him.

PHONE: 3JH, 3XF, 2CI, 2DS, 2GR.  
MORSE: 3BD, 3BU, 3JH, 2AY, 2BM, 2CR, 2DS, 2GR, 2CQ, 2HM, 2IJ, 2YL, 2LO, 5 AC, 5LO.

WIRELESS INSTITUTE OF AUSTRALIA.

New South Wales Division.  
On Saturday, 12th July, between the hours of 10.30 and 11.30 p.m., Mr. R. S. Burman, of Auburn, a member of the Wireless Institute of Australia, logged the following stations on a loop aerial, using a S.T. 75 Circuit.  
Victoria.—3 JH; 3 SW; 3 OT; 3 BD; 3 BQ.  
New South Wales.—2 GQ; 2 N M; 2 CR (all on phone).  
New Zealand.—1 AX; 2 AC; 4 AG; 2 AW; 4 AP; 2XA; 1 AO;



**WHY**

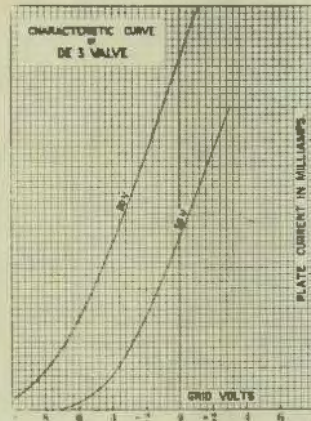
shouldn't you be as particular about small parts as WE are ?

YOU depend on them to help your larger instruments. YOU expect small parts to preserve the energy that reaches your set. SO why shouldn't YOU be as particular about their quality as WE are? WE think no accessory too unimportant to build as carefully as we make fine optical instruments. All the craftsmanship we have developed in 14 years of precision work, we put into every MAR-CO small radio part. Then we put them into the unmistakable MAR-CO packages, so that if you are as particular as we are, you can easily get the "leak-proof" service we build into them. Simply say "MAR-CO" . . . and insist on seeing the MAR-CO package . . . when you want plugs, jacks, switches, grid-leaks, vernier condensers and other small parts.



All Dealers

**D.E.3 Valve.**



The D.E.3 is of the modern, dull, emitter type. With an ordinary dry battery the valve works very successfully, and at a very low cost compared with the accumulator heated valve filament. The voltage required on the filament of the D.E.3 is 2.4 to 3, and an ordinary 3-cell dry battery may be used. This will last about 800 hours. The D.E.3 can be used as a detector H.F. amplifier or note magnifier. When used as a detector the anode voltage should be 30-45, as a H.F. amplifier 45 volts and as a L.F. amplifier 60-80 volts.

The low impedance of the valve renders it particularly suitable as a L.F. amplifier, and it gives very good results when used in conjunction with a loud speaker.

Type	Filament Battery Voltage	Filament Volts	Filament Amps	Anode Volts	Length
"DE3"	(3 dry cells)	3	.06	20-80	110M/M
		4.5			
	Diameter of Bulb		Socket Type		
	25 M/M		"R"		

(Continued from Page 34.)

vide a handy instrument that will do a number of purposes and save the cost of additional instruments. In the case of alternating current this is not so easy, as a moving iron instrument must be used. This prevents the use of shunts for practical purposes for current measurements, because the shunt would have to be of too high a resistance to shunt sufficient current off to operate the meter.

In conclusion, the old axiom might well be applied where instruments are concerned—"Penny wise and pound foolish," and above all instruments should always be handled like a baby, with the greatest care and thought.

The Subscription Rates to "Wireless Weekly" are:—  
12 months (52 issues), post free 13/-.  
6 months (26 issues), post free 6/6.  
We mail direct to your address. Send your subscription to: "WIRELESS WEEKLY," 33 Regent Street, Sydney, N.S.W.

Published by A. W. Watt, "Keira," Alfred St., North Sydney, for the proprietors and printers, Publicity Press Ltd., 33/37 Regent St., Sydney.



## Just like being there yourself!

Just as if you were in the same room as the artists—Radiola Headphones give the perfect rendition that will almost make you doubt that it is the reproduction to which

you are listening.

They give the music in its full beauty—the rich resonance of the high and low notes, and the subtle shading of the lower tones.

*Radiola Headphones make Listening-in a Pleasure*

Standard resistance 2,000 Ohms. Price : 39/6.

PROCURABLE FROM ALL RADIO DEALERS

**Amalgamated**  **Wireless**

*(Australasia) Ltd.*

*Radio Dealers kindly write for Trade Price List.*

Clarence Street  
Sydney

Collins Street  
Melbourne



Friday, August 8, 1924.

WIRELESS WEEKLY

# “STERLING”

(BRITISH MAKE)



## AUDIVOX

ALL PURPOSE

### LOUD SPEAKER

1. In Radio there is no greater goodwill than that possessed by “STERLING” Loud Speakers. Quality created it and quality will keep it.
2. The “AUDIVOX” is faithful to an echo in reproduction—clear, melodious and perfect in tone—ample in volume, with never a sign of distortion. A true “STERLING” production.
3. It is the all-purpose Loud Speaker—equally suitable for home and public use; indoors or outdoors.

AUDIVOX is supplied in the following finishes:—

Black Enamel . . . . .	£9 0 0
Brown, Floral . . . . .	9 10 0
Black and Gold . . . . .	9 15 0

STERLING LIGHTWEIGHT HEADPHONES, 4000 ohms . . . . . **44s.**  
 “STERLING” Radio Goods, obtainable from all Radio Dealers.  
 Large Stocks — Immediate Delivery

STERLING TELEPHONE & ELECTRIC CO. LTD., LONDON  
 Sole Agents for N.S.W. and Queensland :

## The LAWRENCE & HANSON ELECTRICAL Co. Ltd

33 York Street, Wynyard Square, Sydney.

and Charlotte St., Brisbane

Telephone City 6016 (3 Lines)