

# The Queensland Radio News

"Your Own Wireless Journal"

6<sup>D</sup>



Vol. II.

Monday, 2nd August, 1926.

No. 7.

Registered at the General Post Office, Brisbane, or transmission by post as a Newspaper

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It represents a complete array of the most comprehensive and varied range of loud speakers ever put on the market by any manufacturer.

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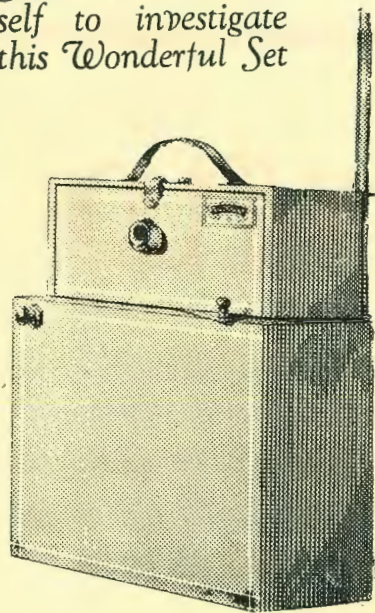
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or direct to Sole Agent for Australasia—

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*You owe it to your-  
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## The "Minuet" P.3—

An Australian-Made Three Valve Set which can be carried by a child—and yet is capable of bringing in any Australian Station.



*T*HIS triumph of skill and craftsmanship is guaranteed to receive Interstate Broadcasting (including 2FC, Sydney) at Loud Speaker strength anywhere in Brisbane while 4QG is in operation.

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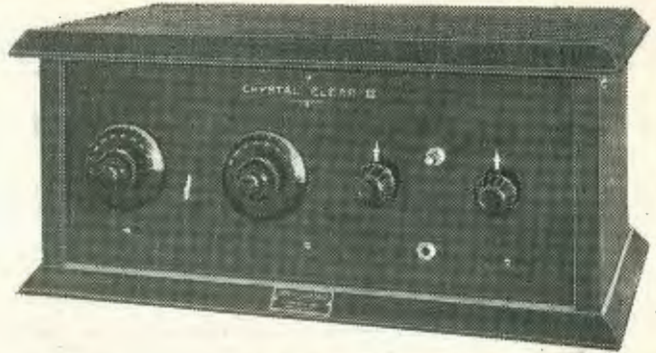
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### Crystal Clear III.

Three-Valve Set, built of best component parts to the latest long-distance circuit. This set will bring in all Australian stations, and gives splendid loud-speaker strength. In solid Maple Cabinet, complete with all Accessories (loud speaker extra).

£14-10-0



# “CRYSTAL CLEAR”

*Comes to Queensland!*

Crystal Clear Radio Receivers—so widely and favourably known in the South for their all-round efficiency, ease of control, and remarkably low prices—are now available to the Public of Queensland.

Crystal Clear makes the ownership of a high-grade multi-valve receiver a simple matter. In addition to the great attraction afforded by their low prices, Crystal Clear Easy Terms help the Amateur still further by installing a receiver in his home on a small deposit and easy weekly payments.

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## Latest Circuits, Guaranteed Efficiency, Lowest Prices

### Crystal Sets

“CRYSTAL CLEAR” SLIDER, with polished ebonite panel. Selective, and has good range. Will work several pairs of headphones. Supplied complete with all accessories . . . . .

32/6

“CRYSTAL CLEAR” JUNIOR DE LUXE. A selective condenser-tuned crystal set, designed with aerial coil and condenser. Sloping bakelite panel, neat stained cabinet. Price, complete . . . . .

62/6

### Valve Sets

“CRYSTAL CLEAR, I.” A powerful little one valve set. Will give good loudspeaker results from 4QG and excellent phone strength on Southern Stations. Price, complete with all accessories . . . . .

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£33/10/-

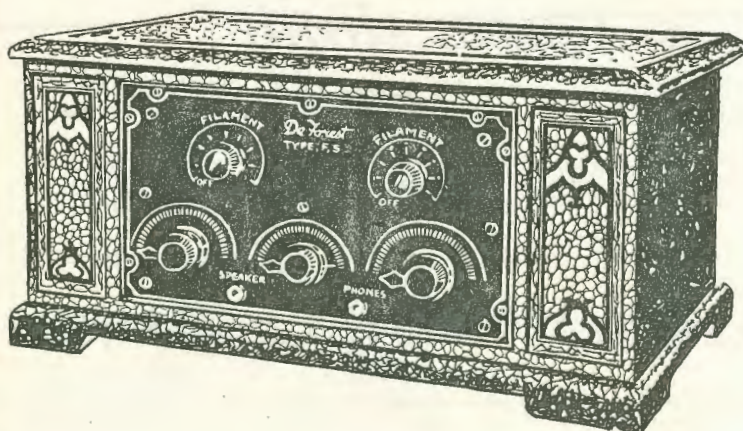
Write to the Queensland Representatives for further information of Crystal Clear Receivers and our wonderful EASY TERMS.

## Crystal Clear Radio Agency

194 Albert Street [opposite C. & G. Building] Brisbane

## New DE FOREST Balanced Circuit Marks New Era in Radio

THIS marvellous new circuit which was created and developed in the De Forest Laboratories writes a new chapter in radio history. It reproduces flawlessly the mellow, soft modulations of the human voice and captures the hitherto elusive overtones of the musical register. The De Forest Type F-5 Radiophones which utilize this circuit, are five-tube instruments designed for use with a short aerial. They are unapproached for sensitiveness and selectivity, separating the stations positively, thus allowing you to pick the broadcast gems without interference and to bring them in with rich, full volume. Tuning is extremely simple, all dial settings being practically identical for any given station and unaffected by length of antenna used. There are no objectionable noises while tuning in.



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Complete with  
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Valves and Aerial  
Equipment

De Forest F-5-AL Radiophone.

In this compact model the F-5 with the powerful De Forest Balanced Circuit is incorporated into a beautiful two tone leatherette cabinet. Though space is provided

for "A" and "B" batteries, an external loud speaker is required. This instrument, too, is a welcome addition to the most perfectly appointed home.

Send for our **FREE Catalogue NOW**

Agents Wanted EVERYWHERE

Factory Representatives—

**INTERNATIONAL RADIO CO. LTD.**

200 CASTLEREAGH ST., SYDNEY, N.S.W.

91-93 COURTENAY ST., WELLINGTON, N.Z.

Price 6d. Copy

Published Monthly



Vol. 2

MONDAY, 2nd AUGUST, 1926

No. 7

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#### LITERARY CONTRIBUTIONS.

especially original articles of interest to readers, are invited. Accounts of Club doings or unusual receptions, &c., &c., will be welcomed. This journal reserves the right to reject any contribution deemed unsuitable.

#### THE SUBSCRIPTION PRICE

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#### REMITTANCES

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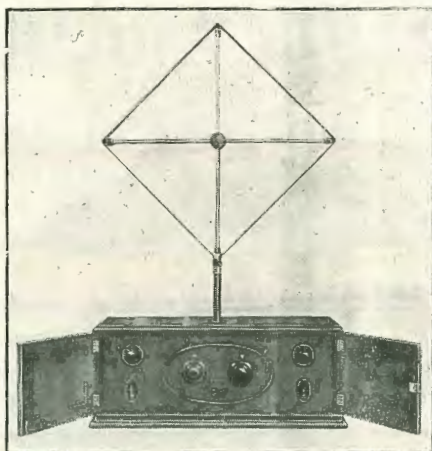
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Announcing Arrival of the Latest Celebrated  
 "Burndept" British Wireless  
 Including the now World Famous

## 7-Valve Super-Heterodyne Burndept Receiver

Operating without  
 any external aerial or  
 Earth Connections.



No Higher Grade  
 Wireless Instrument  
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Simply with a frame aerial placed in the top of the instrument it brings in all Australian Stations and America, and shuts out at will all interference of stations on only a slightly different wavelength.

No higher-grade Wireless Instrument has ever been made. It embodies the very latest and workmanship is supreme—the cabinet itself by Broadwood, of Piano fame.

PRICE COMPLETE, with Accumulator, 7 Burndept Valves, 2 Frame Aerials and Ethovox Loud Speaker, £125.

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### 2-VALVE DUPLEX BURNDDEPT SETS.

Complete with valves, batteries, coils, phones, aerial wire, etc. PRICE £12/10/- (This brings in Melbourne and Sydney perfectly on the 'phones, and Brisbane on the Loud Speaker.)

### 3-VALVE TRIPLEX BURNDDEPT SET.

PRICE £20 COMPLETE. Ethovox Loud Speaker £3 extra. (Brings in all Australian Stations at Loud Speaker Strength.)

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Exactly as supplied H.R.H. the Prince of Wales and His Holiness the Pope. Gives perfect and wonderfully clear and distinct reception, from all Australian Stations on the Ethovox Loud Speaker. PRICE (complete with everything, including large Ethovox Loud Speaker) £57/10/-.

**20%**  
**DISCOUNT**

We were unable to secure space in the Wireless Exhibition, so are Demonstrating at our Warehouse, Bowen Street, off Ann Street (between Fire Brigade and Ambulance), and all Orders for Burndept Wireless booked during August we will allow a Special 20% Discount.

BURNDDEPT SAFETY SWITCHES, 17/6 each.

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THE QUEENSLAND  
RADIO NEWS



A Magazine for Amateurs  
A. T. BARTLETT, Editor

## THE EDITOR'S PAGE

### *The Control of Broadcasting Services*

We have often heard the question asked: "Why should we Australians be obliged to pay for our radio entertainment, when in America the air is free to all who care to tap it?"

At first glance it would appear that America is indeed the Listener's Paradise. However, a closer inspection of the facts and a comparison of the conditions governing broadcasting in America and Australia reveals that Australian broadcasting conditions offer, on the whole, advantages of equal, if not greater value to the listener-in.

Let us briefly outline the broadcasting conditions at present existing in America. In the first place, the stations are controlled mostly by newspapers, department stores, electrical and radio concerns, churches, schools or universities, with the object of propaganda, publicity or education. They collect no revenue, save from that of advertising, with the result that the greater majority of them carry on at a heavy loss, accounted for in the balance-sheet as "advertising expenses." The high maintenance costs are likely to influence curtailment or even abolition of them in time, for it is evident that, with no guarantee of regular revenue, there can be no certainty of permanence in the service.

According to the latest edition of "The Radio Call Book," there are over 600 broadcasting stations in U.S.A., 24 of which operate in the city of New York. The power of these stations ranges from 5 watts to 5000 watts, and their wavelengths range from 200 to 300 metres, with the result that many stations are using the same wavelength. Interference has accordingly become a very serious problem. The ether is heavily overcrowded, and is laden with "howling valves," but the listener has no source to which he may appeal for relief—for the matter is beyond the Government's control.

The entertainments provided by the larger stations are very good—as would be expected in a country of huge population, but, as before stated, there is no guarantee of permanence in the service.

In Australia all broadcasting stations, as is well known, comes under the direct control of the Commonwealth Government. The number of broadcasting stations is restricted, and the wavelengths controlled. Thus interference in Australia should be an unknown quantity. The reallocation of the wavelengths of 4QG, 2BL, 3LO, and 5CL now being considered by the Commonwealth authorities, will soon prove this to be the case.

Broadcasting in Australia is established on a definite and permanent basis. The 17-hour daily service now given by 2BL and 2FC is the finest in the world, and the quality of the programmes from all stations is most praiseworthy.

"Fewer and better" is by far the wiser policy for broadcasting stations to pursue, and this is an advantage that Australian listeners are doubtless enjoying to-day.



The Burginphone  
"Master Five"

Prices of Some of the  
Models

|                          |      |    |   |
|--------------------------|------|----|---|
| Junior Two, complete ..  | £19  | 10 | 0 |
| Junior Four, complete .. | £35  | 0  | 0 |
| Senior Five, complete .. | £56  | 10 | 0 |
| Master Five, complete .. | £89  | 0  | 0 |
| Grand Seven, complete .. | £185 | 0  | 0 |

## There's a "BURGINPHONE for Every Home"

Burginphone Wireless Receivers have well merited the success that they have enjoyed. They are quality products tested and proved by experience. Designed to supply the essentials of a Wireless Set, in the form of Power, Clear Reception, and Long range, they bring the joy of music and the talent of the singer into every home.

Burginphone Wireless Sets are faultless in their reproduction.

An Australian made Product, suitable for Australian conditions.

Wholesale Distributors for Queensland—

### AMICO (Queensland) LTD.

AMICO HOUSE

364 QUEEN STREET, BRISBANE

# RADIO ELECTRICAL EXHIBITION

Amateurs' Competitions

## ADDITIONAL PRIZES

SECTION 7.—Best Multi Valve Set, 4 Valves or over.

Additional to Exhibition Prize,

**The Mullard Wireless Service Coy.**

will present to Winner

**Set of 6 (six) Mullard  
Receiving Valves**

TO BE SELECTED,

Approximate Value, £4.

One Condition only: MULLARD VALVES to valve the set exhibited.

MULLARD VALVE PRESENTS will also be made to Winners of Sections 1 and 2, providing Mullard Valves used.

SECTION 6.—Best 1, 2, or 3 Valve Receiver.

Additional to Exhibition Prize,

**KEITH STOKES PROPTY. LTD.**

will present to Winner

SET of RADIOKES Precision Coils for Browning Drake Circuit .. . . . £2 2 0

SET of RADIOKES Precision Coils for Neutrodyne Circuit .. . . . 1 12 6

SET of 6 Mounted Duo Lateral Coils .. . . . 1 5 6

Total Value .. . . . £5 0 0

One Condition only: RADIOKES Precision Coils of some type must be used in the Circuit.

Distributors  
for  
Queensland

## EDGAR V. HUDSON

55 Charlotte Street  
BRISBANE



# The Radio and Electrical Exhibition

## Bright Prospects of Success

Some months ago the Electrical Federation of Queensland discussed the advisability of holding a combined Radio and Electrical Exhibition. The project met with considerable enthusiasm, and a Board of Control was formed, consisting of Messrs. B. C. Percy (Lawrence and Hanson Elec. Co., Ltd.), Chairman, J. B. Chandler (J. B. Chandler and Co.), J. H. Hindman (Brisbane City Council Electricity Supply Dept.), and C. L. McLaughlin (Norman Bell and Co., Ltd.).

It was decided to hold the Exhibition from August 9th to 14th (Show Week) in the Exhibition Concert Hall. Since then events have moved rapidly, and the rather heavy task of organising the affair has been splendidly carried out by all concerned.

Twenty-seven stands are being erected, in which various radio and electrical firms will exhibit their goods.

Station 4QG will be located in Stand No. 1, which will be fitted up as a broadcasting studio. The director (Mr. J. W. Robinson) has arranged special popular programmes for the week. Three sessions will be broadcast daily from this studio, namely, afternoon 3.30 to 4.30 p.m., lecture 7 to 7.45 and evening 8 p.m. to 9.20 p.m. A special Bedtime Story Session has been arranged for Saturday, the 14th inst., when Uncle Ben and Uncle Jim will meet and entertain their juvenile listeners.

Country visitors will welcome this opportunity of seeing just how work in a broadcasting studio is carried out.

Another interesting exhibit will be a working model of an automatic telephone exchange, which is being exhibited by Messrs. Siemens (Aust.) Propy., Ltd. A lecture will be given at the Lecture Session from the Exhibition Studio on Monday, the 9th inst., on the exhibit.

Stands Nos. 3 and 4 have been allotted to the amateurs' competitions. The "Queensland Radio News" has been asked by the Board of Control to organise and conduct these competitions.

Entry forms, containing full particulars, have been distributed among the various radio dealers and clubs, and it is expected that this section will be a very popular one.

The following is a list of the competitions and prize money:—

Section 1.—Best Low-Power Transmitter. First prize £3, 2nd £1/10/-. Entrance fee 2/6.

Section 2.—Best-designed Short Wave Receiver. (Extra points allotted to receivers oscillating on very short wave-lengths.) First prize £2, 2nd 10/-. Entrance fee 2/-.

Section 3.—Best home-made piece of apparatus. (Points allotted according to amount of work entailed.) First prize £2, 2nd 10/-. Entrance fee 2/-.

Section 4.—Most novel crystal set. First prize £1, 2nd 10/-. Entrance fee 2/-.

Section 5.—Most selective crystal set. First prize £1, 2nd 10/-. Entrance fee 2/-.

Section 6.—Best 1, 2, or 3-valve set, which may be a reflex circuit including a crystal. First prize £2, 2nd 10/-. Entrance fee 2/-.

Section 7.—Best multi-valve set, 4 valves or over. First prize £3, 2nd £1. Entrance fee 2/6.

Section 8.—Juvenile, 14 years or under. Best piece of home-made apparatus. First prize £1, 2nd 10/-. Entrance fee 6d.

Section 9.—Special "Queensland Radio News" prize. Best designed and most effective wave trap, adaptable to any circuit. First prize £2, 2nd £1. Entrance fee 2/-.

Attention is also directed to an advertisement appearing elsewhere in this issue, in which additional prizes to the above are offered for Sections 6 and 7, by Messrs. Keith Stokes Pty. Ltd. and Mullard Service Ltd.

Entry forms must reach the Editor of this journal not later than Friday, 6th August, while all apparatus must be delivered to the stall at the Exhibition Hall by 10 a.m., Monday, 9th August.

For the convenience of purchasers of radio sets, the radio inspector will be represented at a special stand, where licenses will be issued and other information given.

The "Queensland Radio News" will have a display of their wireless publications at the amateur competitions stall, where copies of this journal, the "Broadcast Bulletin" and "Wireless" (the text book by J. W. Robinson and G. Williams) may be purchased.

The various radio and electrical firms will also be exhibiting the latest in receiving apparatus and electrical appliances for the home, etc.

The exhibition promises to be one of exceptional interest and educational value, and we urge our readers not to miss this opportunity of visiting Brisbane's first radio and electrical show.

### The Subscription Rate

to

## "The Q'land Radio News"

is only

### 6/6 Per Year-Posted Anywhere

Send Along that Postal Note To-day

# STATION 4QG

## Synopsis of Programmes for the Month of August

- Sunday, August 1.—City Tabernacle and Band Concert; Model Christian Endeavour Service.
- Monday, August 2.—Organ Recital from Exhibition Hall and South Brisbane City Orchestra.
- Tuesday, August 3.—Studio Programme and Centennial Hall.
- Wednesday, August 4.—Studio Concert and Savoy Orchestra.
- Thursday, August 5.—Studio Programme and Municipal Concert Band.
- Friday, August 6.—Studio Programme and Savoy Orchestra.
- Saturday, August 7.—Gaiety Theatre and Lennon's Ballroom.
- Sunday, August 8.—St. Stephen's Roman Catholic Cathedral and Band Concert.
- Monday, August 9.—Opening Ceremony New Settlers' League Conference, from Albert Hall; Official Opening of Radio and Electrical Exhibition from Exhibition Hall; Concert Programme from Demonstration Studio, Exhibition Hall; South Brisbane Orchestra.
- Tuesday, August 10.—Demonstration Entertainment and Centennial Hall.
- Wednesday, August 11.—Official Opening Royal National Show by His Excellency the Governor General (Lord Stonehaven); Demonstration Entertainment featuring the Savoy Orchestra and Federal Band.
- Thursday, August 12.—Demonstration Entertainment featuring the Lyric Entertainers; Brisbane Municipal Concert Band.
- Friday, August 13.—Description of the Show from the Showground; Demonstration Entertainment (Classical Programme).
- Saturday, August 14.—Demonstration Entertainment and Lennon's Ballroom.
- Sunday, August 15.—St. Paul's Presbyterian Church; Band Concerts.
- Monday, August 16.—Studio Concert and South Brisbane City Orchestra.
- Tuesday, August 17.—Ithaca Choral Society; Centennial Hall.
- Wednesday, August 18.—Studio Programme; Savoy Orchestra.
- Thursday, August 19.—Studio Programme; St. Stephen's Cathedral Choir; Crystal Palace.
- Friday, August 20.—Studio Programme; Savoy Orchestra; Federal Band.
- Saturday, August 21.—Seventh Day Adventist Church; Violin Recital from the Studio of Luis Amadeo Pares.
- Sunday, August 22.—Wharf Street Congregational Church; Band Concerts.
- Monday, August 23.—Operatic Concert from the Studio; South Brisbane City Orchestra.
- Tuesday, August 24.—Limless Soldiers' Concert from Exhibition Hall.
- Wednesday, August 25.—Federal Band; Savoy Orchestra.
- Thursday, August 26.—St. James' Choir; Municipal Band.
- Friday, August 27.—China Inland Mission Public Meeting, Ann Street Presbyterian Church; Studio Programme.
- Saturday, August 28.—Gaiety Theatre, Toowong; Lennon's Ballroom.
- Sunday, August 29.—Pleasant Sunday Afternoon—Newmarket Baptist Church, Young People's Department; Band Concert.
- Monday, August 30.—Studio Programme.
- Tuesday, August 31.—Brisbane Apollo Club.

## Strong, Silent POWER

Twenty years ago when the motor-car industry was in its infancy, PREST-O-LITE gave the automobile its first dependable headlights.

To-day, PREST-O-LITE Radio Batteries are giving wireless enthusiasts the world over, wonderful service and satisfaction.

Prest-o-Lite Batteries are the Rolls-Royces of the Battery Field. They outlive other makes by years, and give a steady and constant discharge under all conditions.

Write for full information and prices.



## Prest-O-Lite 'A' and 'B' Batteries

Will Hold Their Charge Over Longer Periods

### QUEENSLAND MOTORS LIMITED

Service Station:  
WICKHAM ST., VALLEY

BRISBANE

Head Office:  
ADELAIDE STREET

# A Push Pull Amplifier

By H. L. HOBLER, A4DO.

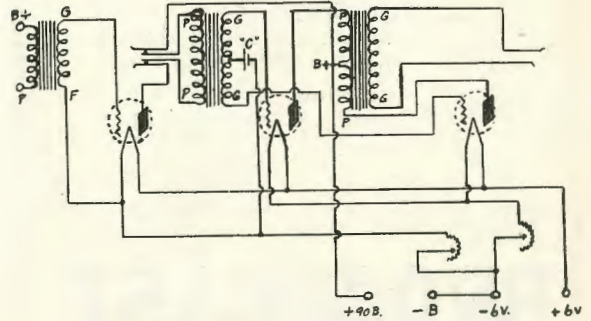
Many wireless enthusiasts desiring to add a powerful audio-frequency amplifier to their existing receiver are confronted with the problem of constructing such an amplifying unit that will satisfactorily boost up the received signals without making them distorted and mushy. It is generally known, that when more than two stages of straight transformer-coupled audio-frequency are used for magnifying, that the results obtained are anything but perfect, loud oscillation of the receiver itself, induction, noises, generator hum from the transmitting station, etc., introducing too many foreign noises into the reproducing device. This unsatisfactory result is not the fault of the circuit or parts employed in the amplifier, but is largely due to the fact that the very weak noises, which are unheard when only a small powered amplifier is used, are so greatly magnified by the additional magnifying valves, that the music or speech being received is practically obliterated by these noises.

Theory tells us that each audio magnifying valve amplifies five times, so by this we can see why more than two stages of audio-frequency amplification are not recommended.

Suppose we take it that the received signal coming from the detector tube is strength 1; then we

see that the first audio-frequency stage amplifies it to strength, the second stage makes it strength 25, and the third stage strength 125. Now we can see why more than two stages of straight transformer-coupled audio-frequency should not be used for per-

FIG. 1.



fect clarity of reception, and it is for this reason that I have chosen the push pull amplifier as being the "goods" for faithful and clear reproduction.

## Improve Your Reception

with

# EDISWAN Valves

(Stocked in English and American Caps)

### OTHER TYPES

- |                       |                       |
|-----------------------|-----------------------|
| ARDE . . . . . 12/6   | PV6 Dull Emitter 18/6 |
| PV5 Dull Emitter 18/6 | PV8 Dull Emitter 18/6 |

Reduced Prices *of the Famous "A" and "A.R." Valves* **5/-** ea.

## ALL WIRELES DEALERS

Wholesale—

EDISON SWAN ELECTRIC CO., 156 Creek St., Brisbane



TYPES "A," "R," and "R."

Plate Voltage, 30-80.  
 Filament Voltage, 4.  
 Normal Filament Current 0.75 amperes.  
 Prices, 5/- each.



TYPE "A. R. 06."  
 Filament Voltage, 2.5.  
 Plate Voltage, 20-50.  
 Filament Current, .06 amperes. Price, 13/6 each.

Don't Fail to Visit Our Stand at the Radio Exhibition. Stand No. 19 (First on Left)

## Get the Programmes

Here is a neat little 16-page weekly budget of the Radio Programmes from 4 Q G (Brisbane), 2 B L (Sydney), and 3 L O (Melbourne). You'll find it a handy little friend when listening in or when arranging your radio evenings.

## The BROADCAST BULLETIN

The programmes are arranged from Monday to Sunday. Subscribers' copies are lodged at the G.P.O. Brisbane each Friday before 11 a.m. in time to reach all districts. Thus, country subscribers can enjoy the full week's programme.

On sale at all Radio Stores and Booksellers, Saturday and Monday.

12 Months - 11/6  
6 Months - 6/-  
Per Copy - 2d.

Send YOUR Subscription  
RIGHT NOW

The Broadcast Bulletin  
Box 1095N, Brisbane

Please mail me The Broadcast Bulletin every week  
for ..... months. I enclose ..... herewith.

Name .....

Address .....

By referring to the schematic diagram in figure 1 we see that the circuit is perfectly straightforward. Two stages of push pull amplification are shown, and jacks are provided for using different numbers of valves.

The filament current to the two amplifying valves used in conjunction with the push pull transformer is regulated by a single rheostat, the resistance of which should be in the vicinity of 25 ohms. When a rheostat of this resistance is used, any type of dull or bright emitter valves can be employed for amplifying without the addition of resistance units. This is a desired feature of such an amplifier and should be adopted.

A  $4\frac{1}{2}$  volt C battery is connected in the filament to grid leads of the first and second push pull valves. This is shown in the diagram in figure 1, being connected through the centre tap of the first push pull transformer. Different values of C battery voltages are required with different types of valves, therefore it is advisable to try different values until the correct proportion is found for the particular tubes used.

A suggested baseboard and back of panel layout scheme is shown in figure 2, and is recommended for compactness, neatness and wiring purposes. However, should the builder desire, he can easily arrange the components to suit himself.

Battery leads are brought to a terminal strip on the right hand end of the back edge of the baseboard, while the input terminals to the amplifier are mounted on a smaller insulating strip screwed to the baseboard at the opposite end.

The C battery is mounted on the baseboard as shown, together with the three valve sockets and the three transformers. The two rheostats and the two jacks are arranged on the insulating panel. Cushioned valve sockets are recommended if dry cell dull emitter valves are used, as they prevent, to a large extent, the annoying microphonic noises usually experienced with these low filament current consumption tubes. Shielding, screening and earthing of the transformers often aids in keeping noises out of an amplifier, and minimises body capacity effects to a large extent. However, this is seldom necessary with a push pull amplifier. Good material should be used throughout, and all joints should be well made, either by soldering or screwed under large terminal nuts. The former method is preferable once the amplifier has been tested and completed. All battery wires should be insulated, especially those carrying the high-tension current from the B or high-tension battery.

The operation of this push pull amplifier is similar to that of an ordinary straight out audio-frequency amplifier. After it has been connected to the receiver's supply current to the valve filaments by gradually "turning on" the rheostat. As the rheostat is "turned on" resistance is cut out of the filament circuit with the result that more current is allowed to pass. Provided everything is in order and properly connected, oscillation should commence as soon as sufficient plate and filament voltage is supplied to the valves. Adjust both this plate and filament supply until maximum results are obtained, remembering to use as

little current and voltage as possible for satisfactory and consistent working of the whole receiver and amplifier. If the same group of batteries are used

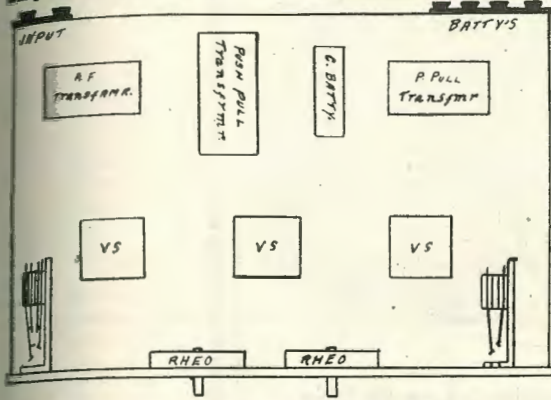


FIG. 2.

for the receiving set and the amplifier, care should be taken to see that short-circuits will not occur when both units are connected, as this may result in considerable damage, and all of the valves may be burnt out.

### An Error

In the article on "The Care and Maintenance of Accumulators," by Mr. H. Hobler, published in our last issue, a printer's error occurred that might have had serious consequences to the inexperienced.

On page 39 reference was made to the procedure for diluting sulphuric acid in which it was stated "always add water to acid and not acid to water."

This, as most of our readers know, is directly in reverse to what it should have been. The sentence referred to should have read, "Always add acid to water and not water to acid." We trust those who read this article will note this important correction.

### Obituary

We extend our deep sympathy to Mr. J. Malone Chief Manager of Telegraphs and Wireless for the Commonwealth in his recent sad family bereavement.

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## F. NOLAN

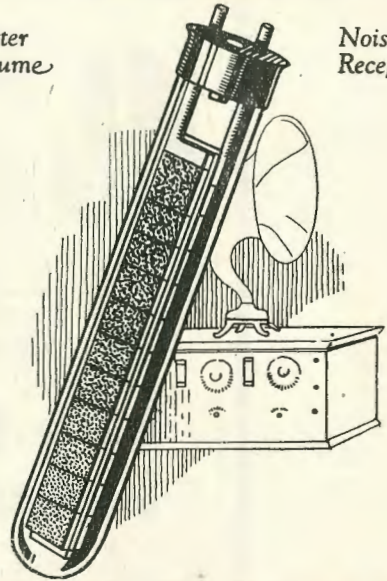
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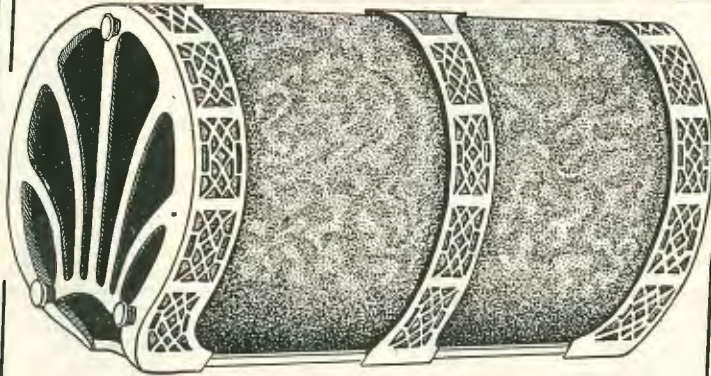
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# A New Principle in Radio Reproduction

By DR. LEE DE FOREST,  
NEW YORK.

Since the days of the first telephone receiver of Bell, every practical telephone reproducer has been operated on the same general principle, that is, by moving a diaphragm or some form of membrane in the direction perpendicular to its surface. It seems that telephone engineers have been unable to get away from the idea that a medium which produces sound waves must work like a piston. While this method has proven quite satisfactory so long as applied to ear-phones, it has certain inherent defects which become apparent when a larger body of air is agitated, as in the case of a loud speaker.

When used in connection with the Phonofilm, or talking moving picture, these defects of the diaphragm piston-action are quite objectionable. The successful presentation of the Phonofilm requires that a large theatre be filled with sound of uniform volume without objectionable intensity in any location. The reproduction, of course, must be perfectly natural so that the audience will not have to exert conscious effort in order to understand what is being said. Furthermore, the reproducer must be free from directional qualities so that the audience will concentrate attention upon the screen and thus gain the illusion that words are coming from the lips of the actors rather than from some adjacent source.

Loud speakers of the diaphragm and horn type are unsuited for use in theatres and large auditoriums, owing in part to the fact that such speakers project their primary sound energy into a space of approximately the form of a cone, with waves of maximum amplitude along the axis, while the diaphragm itself forms the truncated apex. Attempts to produce sufficient volume outside of this conical limit, as is necessary to supply the side rows of a theatre, result in objectionable intensity nearer the apex, or in the middle front seats. The line of maximum amplitude along the axis produces a distinct directional effect, making the source of sound easily detected by aural triangulation. Furthermore, the piston impact creates impure waves or distortion, which impair the naturalness of reproduction. Even a large number of speakers placed across the stage produce the same results, each individual in the audience tracing the source of sound to the particular speaker which transmits to him the predominant energy.

In seeking a solution for this baffling problem, I felt compelled to abandon diaphragm reproducers of both the cone and horn types, and as a result discovered an entirely new principle of sound reproduction which avoided all the defects mentioned above. In this new method I found that when an electromagnetic telephone unit is applied tangentially to the edge of a properly curved membrane, instead of at right angles to it, the entire surface takes up the vibrations in a gentle whipping or rolling action and sends out sound waves of the correct amplitude in all directions. Many of these waves are projected radially by the displacement of the membrane

normal to its surface, but the predominant action seems to be due to either the rolling or the frictional effect which transmits waves tangentially. This is shown by the fact that the maximum sound energy is propagated from the area of the membrane which has the least radial displacement and the greatest circumferential motion, as the portion near the edge to which the tangential impulses are applied.

It was found that the maximum efficiency is obtained when the membrane is approximately cylindrical or a section of a cylinder; but a true circular contour is not satisfactory because it imposes a variety of stresses which results in distortion due to creating natural periods of dissonant vibrations. The membrane must be permitted to assume a particular horseshoe form, or more specifically, a catenary, and there must be an opening in the back so as to avoid resonance, or the "barrel tone."

The distinctive characteristics of this new form of wave action are extreme clarity and naturalness of reproduction, and the ability to fill a large room with uniform volume without objectionable intensity nearby or in any one direction. This may be explained by the fact that a larger section of air receives the primary impulses at a uniform amplitude and in all directions simultaneously, thus avoiding certain interferences and the necessity of readjusting the wave action after it has been propagated. In other words, each impulse travels in a straight line from the membrane to the hearer without dissipating its energy in adjacent sound voids as represented by the space in the rear of a horn type speaker. The increased carrying power without intensity is due to the larger source of energy with less concentration per unit of cross-section.

At first I constructed two models of the Audalton, as this new reproducer is called, a large one for theatre work and a smaller size for radio use in the home. But I found that the smaller size was equally efficient in the theatre, owing to its wonderful carrying power and distributive qualities. The actuating unit, which is of the balanced armature type, is extremely sensitive both to the lowest musical note and to the highest audible overtones. This sensitiveness is essential to the faithful reproduction of the individual instruments of an orchestra in their natural timber, but it also necessitates good broadcast reception, for a reproducer can not make up for the deficiencies of the receiver. Radio is rapidly approaching a high degree of efficiency, however, and both receiver and reproducer must contribute their share. Furthermore, the public is demanding better equipment, and as the mystery of radio wears off, people are learning the importance of careful tuning and the proper care of batteries.

An interesting psychological reaction has been observed in the introduction of the Audalton. Probably the most beautiful masterpiece of Beethoven would receive scant appreciation from primitive peo-

ples whose weird chants have profound emotional and even religious significance to them. Likewise, modern jazz, which has such strange effects upon our younger generation, receives little commendation from the older folks whose tastes run more to the dreamy waltz. The confirmed radio enthusiast has become accustomed to the "horn-tone" of reproduction, which he is prone to call "fulness" and "blending." When he hears clear and natural reproduction, therefore something seems to be lacking. On the other hand, the trained musician who has had pronounced aversion to radio reproduction, or "canned" music of any kind, readily appreciates this new style of reproduction for the very reason that it avoids the added resonance to which he has objected. These comparisons merely show that so far as music is concerned, at least, we prefer that to which we are accustomed. But since the public is becoming more discriminating every day, it seems safe to predict that in the long run the best quality of reproduction will prevail.

and G. Williams (Instructor Marconi School of Wireless Sydney), is now rapidly selling out, and enthusiasts who have not yet secured their copies are advised to make early application for them at any newsagent's shop in Brisbane. Those unable to obtain copies from a news agent should write to either The Read Press Ltd., Albert Street, Brisbane, or to McLeods Bookstore, Elizabeth Street, Brisbane, enclosing a postal note for 4/-.

"Wireless" represents the first serious attempt to produce in Australia a reliable radio text-book. It is a most complete and thorough little volume, profusely illustrated and contains much information that should be useful to the radio enthusiast.

The whole of the illustrations in the book are original. None of the circuit diagrams have been merely "lifted" from other books and periodicals and reproduced, but all have been carefully drawn by the authors.

For those interested in the broadcasting movement there is an excellent and lengthy chapter. This describes just how the whole business necessary in connection with the transmission of a programme is effected and also describes the type of apparatus in use in modern high powered stations. Some peeps behind the scenes at a big broadcasting station are given.

A complete table of call signs of all the Australian and New Zealand ship shore and amateur radio stations alphabetically arranged is, in itself, a feature which makes the book a very necessary part of the equipment of a radio enthusiast's "den."

# "WIRELESS"

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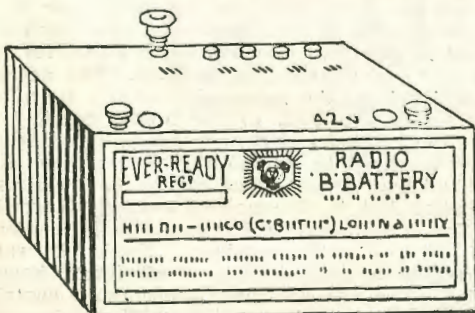
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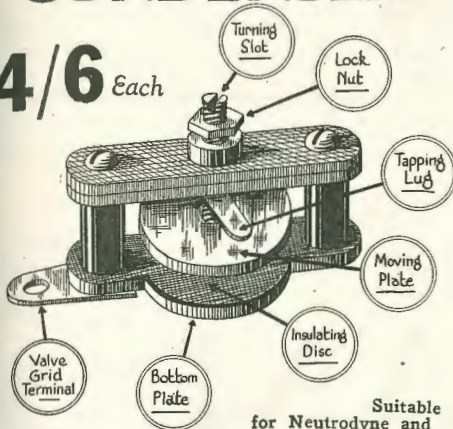
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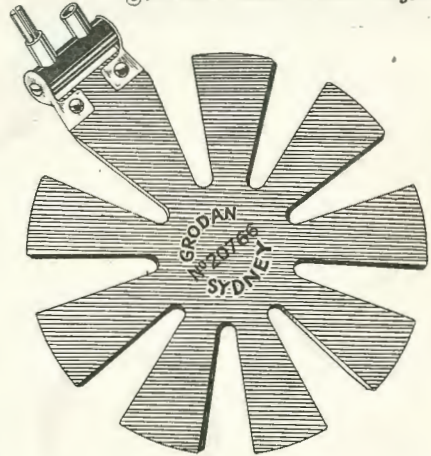
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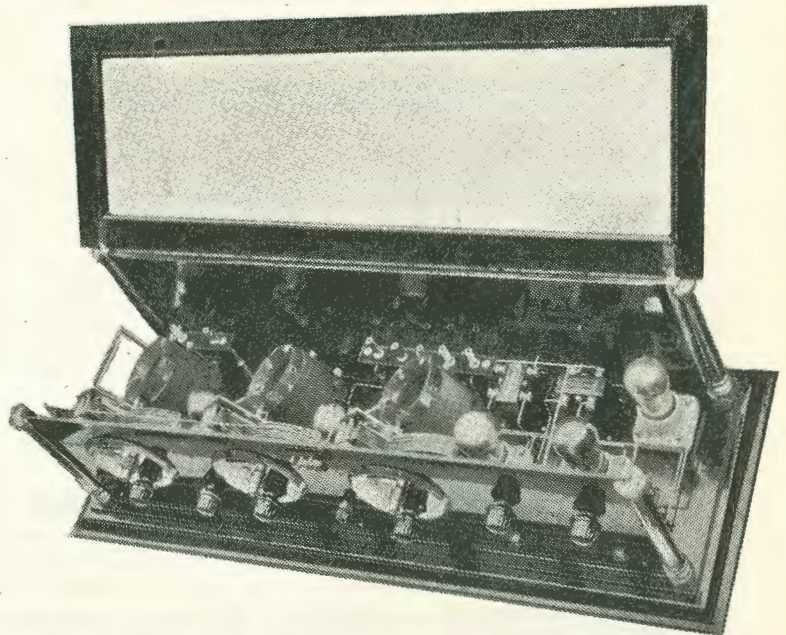
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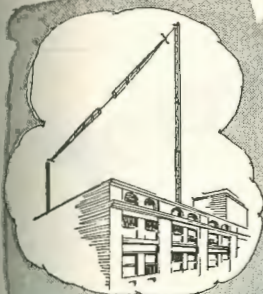
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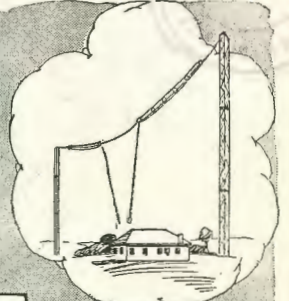
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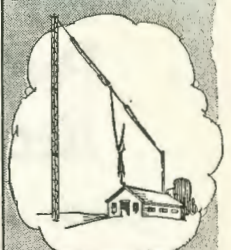
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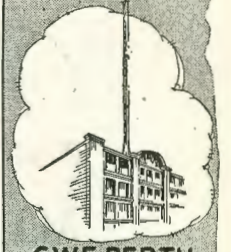
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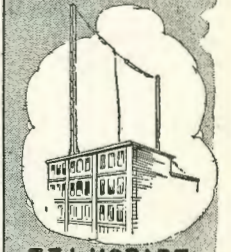
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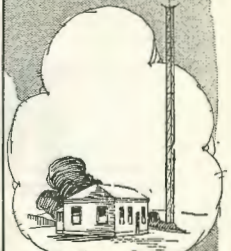
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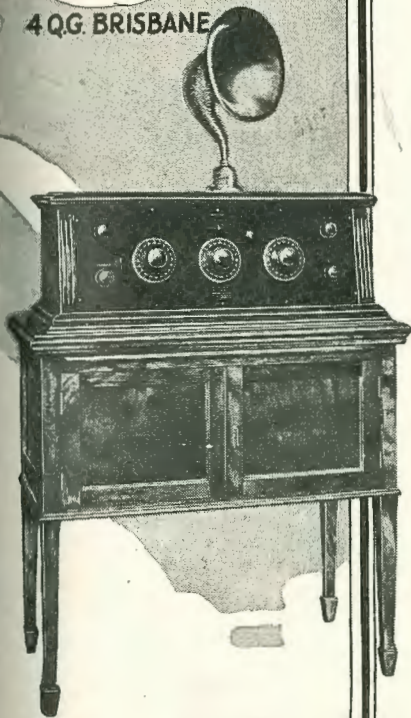
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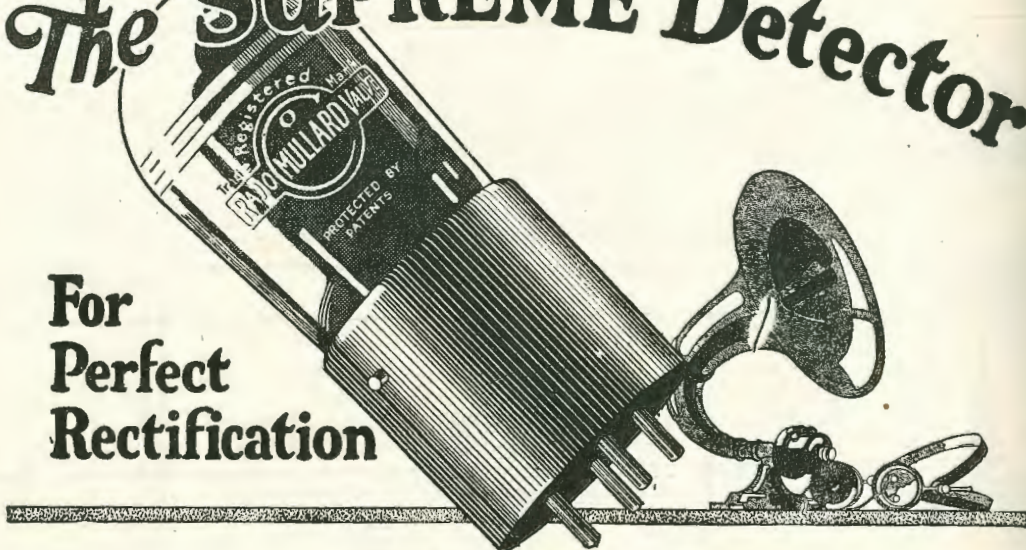
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| D.3               | 1.8        | 0.3         | 13/6  | D.3               | 1.8        | 0.3         | 13/6  | PM.4          | 3.7        | 0.1         | 13/6  |   |
| DFA.4             | 5.0        | 0.25        | 13/6  | DFA.1             | 5.0        | 0.35        | 13/6  | DFA.0         | 3.5        | 0.35        | 13/6  |   |
| PM.3              | 3 to 4     | 0.1         | 13/6  | DFA.3             | 6.0        | 0.06        | 17/6  | DFA.4         | 5.0        | 0.25        | 13/6  |   |
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## THE MASTER VALVE

# The Automatic Telephone

By J. H. BROOME.  
(SIEMENS (AUST.) PTY., LTD.)

No doubt many people remember the dictum of Mr. Punch, who remarked that the Automatic Telephone is an improved means of getting the wrong number without the assistance of an operator.

Also without doubt, there are many of whom, having daily experience of automatic working, wonder from time to time how it works.

It is not possible in the space of a short article to do more than briefly touch upon first principles such as apply in case of a small exchange and it will be understood that in large exchanges there is a large

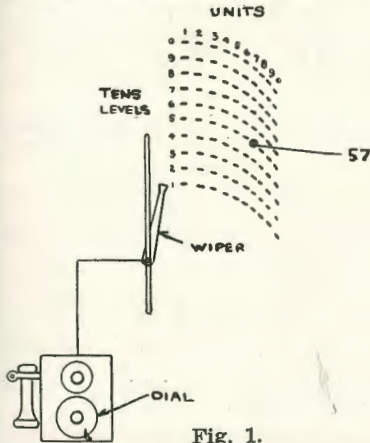


Fig. 1.

amount of equipment which is not herein described.

The lay visitor is generally rather appalled at the multitude of small complicated looking pieces of apparatus wires and cables that go to the making of an Automatic Exchange.

It certainly looks rather complex to the layman, but it should be remembered that even the most complicated electrical circuit really consists of a number of simple circuits. However, it is not proposed to go into circuit arrangements in this article but merely to endeavour to give an idea as to how the machine operates.

Now in an Automatic Exchange all subscribers will be found to have the same number of figures (or digits) in their numbers, i.e., in a ten line system the numbers run from "1 to 0" not "1 to 10" as one would expect. In a 100 line system the numbers run from "11 to 00," not "1 to 100."

In Automatic working "0" is actually equal to "1" so "00" is really equal to "100," but we will see why a little later on.

Now, imagine that 100 subscribers' lines are arranged in ten shelves, each of ten lines, as shown in fig 1, and that we have a moveable shaft and wiper or contact arm so arranged so that we can move the latter up to any one of the shelves or levels and then rotate it on to a particular line in that level

The levels are numbers "1 to 0" and the contacts or lines on each level are also numbered from "1 to 0" similarly.

Now you will see that line No. 11 is the first line on the first level, while 10 is the tenth on the first level. Similarly the lines on the top or tenth level are numbered "01 to 00." From this you will see

that if we wish to connect to, say No. 57, the shaft must be moved up five steps to the fifth level and then rotated seven steps when the wiper will be resting on the required line No. 57.

Now, how does the calling subscriber control the connector or "Selector" as it is called?

Well, as he is, of course, some distance from the Exchange and cannot move the "Selector" by hand, we arrange for him to do it electrically.

The "Selector" is fitted with electro-magnets, one of which is made to operate a lifting ratchet which steps up the wiper to the correct level. Another magnet operates a rotary ratchet which steps the wiper round to the required contact, while a third magnet releases the wiper and shaft when the conversation is finished and restores the "Selector" to its normal disengaged position.

The magnets are controlled by other electro magnets, known as relays. These act as switches for bringing in the particular magnet required and causing it to perform correctly. They also control "Ringing Current," etc., and act as interpreter between the calling subscriber and the "Selector." The "Selector" is shown in fig. 2.

Now, upon all telephones connected to an Automatic Exchange you will see a device known as a "Dial" and it is this "Dial" which instructs the exchange apparatus (i.e. the "Selector") what number is required. (See fig. 3.)

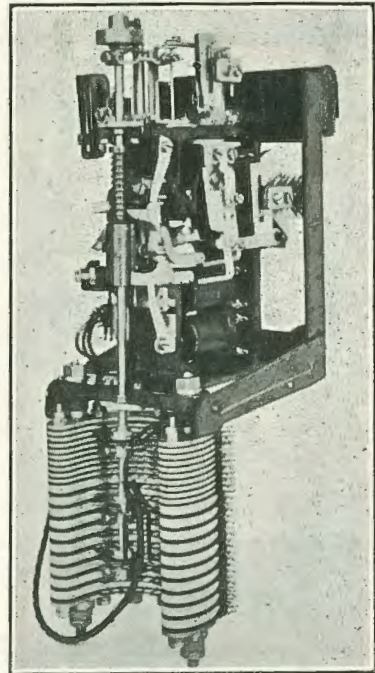


Fig. 2.

Upon the face of the "Dial" ten finger holes will be seen with numbers behind them. There is also a finger stop. If the finger is inserted in one of the holes—say No. 1—it will be found possible to rotate the "Dial" plate until the finger stop prevents further movement. If you then release the plate by removing the finger, the plate will return to normal

position under spring action, but as it returns the "Dial" will transmit one impulse to the "Selector," that is if the receiver has previously been removed from its hook.

If the finger is placed in number 2 hole, then two impulses are sent and so on up to "0." In this case ten impulses would be the result.

Let us now get a call through from our telephone to Miss Smith whose number is 57.

First the receiver is taken off the hook. This operates some of the relays in the "Selector" and prepares the latter to operate. You will know it is ready by the continuous "Buzz" in the receiver.

Next our finger goes into hole No. 5 in the "Dial" and we pull it round to the stop and let go. As it returns to normal five separate impulses are transmitted to the "Selector," which promptly steps up to No. 5 level.



Fig. 3.

Now we repeat the performance with No. 7 hole in the dial. This time seven impulses are sent and our "Selector" steps round to the seventh contact, i.e., No. 57. Is the line we want being rung? Yes! it is. We can tell that by the interrupted "Buzz" we can hear in the receiver and we know that it is the "Ringing Signal." If the line were engaged a much higher pitched interrupted musical tone or "Busy Back" would inform us of the condition.

"Hello" Ah! here is Miss Smith, (and as the rest of the conversation does not concern telephones, automatic or otherwise, I do not intend to let you listen to it).

If you should have any idea of calling up the same number on another telephone and trying to hear the conversation, you may give it up at once because the Automatic is secret, as well as speedy.

In the larger exchanges additional selectors are used to discriminate between the different thousands and hundreds groups and sometimes, as in the case of Brisbane, to pick out the particular exchanges as well.

The exchanges are known by letters which also appear on the "Dial." This arrangement is only to save the subscriber having to memorise five figures as the letter is equal in impulses to the figure with which it is associated on the "Dial."

In conclusion, a little advice to users of the Automatic Telephones.

- (1) Be deliberate.
- (2) Do not assist or retard the "Dial."
- (3) Learn to distinguish the tones.
- (4) Report your troubles to the Exchange as soon as possible.

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# Birthday Section

## Editorial Note

Early in July, your Editor was approached by representatives of the Woolloowin Radio Club, who brought forward a rather startling and most unusual request. They asked that a section of the August issue of "The Queensland Radio News" be set aside to the Club in honour of the second anniversary of its formation. They undertook to fill this section with articles of good quality and of a nature that amateurs generally would find intensely interesting.

After consideration it was decided to allow the Club to submit the proposed matter for our perusal. This was done, and to be quite frank, we were most agreeably surprised at the calibre of the matter submitted. We knew the Woolloowin

Club to be a body of enthusiasts but we were not aware that their ranks held the talent that these articles revealed.

Thus, it was decided to adopt the Club's suggestion and to publish the articles. We hope that by the inclusion of this section the radio clubs of Queensland and other States will receive an impetus in their membership figures for no more striking testimony to the value of a Radio Club as a medium for sound radio instruction could be offered.

So, when you read 4WN's articles that follow, we feel sure you will join with us in wishing the Woolloowin Radio Club a hearty and well-deserved "Many Happy Returns" of their auspicious Birthday.—The Editor.



THE WOOLLOOWIN RADIO CLUB (4WN).  
 Front Row.—V. F. Kenna, J. P. Love (Hon. Treasurer), H. F. Coffey (Technical Adviser, O/C V.I.B.), H. Kington (President), H. A. Jiear (Hon. Secretary), C. J. Grant, F. W. Hoddinott.  
 Second Row.—L. J. Feenaghty, W. Blaikie, C. Stephenson, H. Stephenson, G. A. Anderson, E. G. Meek.  
 Back Row.—W. J. Meadley, P. J. Kelly, H. I. Moore (Operator, V.I.B.), A. J. Thomas, R. F. Connolly, B. W. Dalton.

## Birthday Messages

"I have pleasure in sending a message of greeting to the Woolloowin Radio Club on the occasion of its second anniversary.

"The development of broadcasting seems to have resulted in a lessening of the enthusiasm amongst members of radio clubs in various States. It is refreshing to find in the Woolloowin Club that not only has enthusiasm not lessened, but the interest of the members is very much alive and their activities expanding. A radio club is capable of exercising a very desirable influence amongst broadcast listeners who may not possess the technical knowledge or the desire to enable them to operate their receivers with satisfaction to themselves and without interference with their neighbours. Broadcasting is very much a co-operative affair, and amongst those who voluntarily undertake responsibilities in the harmonious development of the business are the members of radio clubs, whose advice and assistance tactfully given, should be of considerable value. The Woolloowin Club doubtless is cognisant of these opportunities and responsibilities, and having regard to the enterprise and enthusiasm of its members, one can confidently look forward to the club being able to report on its next birthday satisfactory results of work in the direction indicated.

"I congratulate the officers and members of the club on their club birthday, and wish them the greatest measure of success in the ensuing year."

**J. MALONE,**

Chief Manager, Telegraphs and Wireless, Melbourne.



On this, the occasion of the second birthday of the Woolloowin Radio Club, I note with pleasure the continued enthusiasm of the members, and in offering the club my congratulations, I trust that their efforts to advance the radio art will meet with continuous success.—Yours faithfully,

**T. ARMSTRONG,**  
Radio Inspector.



The Woolloowin Radio Club is two years old. It is not so very old in actual years, but is quite old enough to have witnessed some truly remarkable developments in the radio world.

I sincerely wish the Club many, many happy returns, and hope that its success may be the means of exciting enthusiasm which will result in the formation of many other radio clubs.

**J. W. ROBINSON,**  
Director.  
Queensland Radio Service.

## Presidential Message



"Two years old, and," to borrow a well-known slogan, "still going strong."

Few radio clubs can say, after two years' existence, that the enthusiasm and interest of its members have never abated, and there has never been any need to reorganise after a temporary setback. For the last two years the Woolloowin Club has taken the lead in every movement of importance in radio matters in this State. Obstacles to progress have been met and overcome in the proper spirit, which has only been made possible by the good comradeship and enthusiasm which has always existed among the members.

The club is working steadily for the formation of a Council which would be truly representative of the radio club movement in Queensland. It is both desirable and necessary that some such permanent body be formed to protect the interests of both radio club members and B.C.L.'s

I congratulate the club members on their progress during the past two years, and urge them during the coming year not to let their enthusiasm and interest wane. Remember good comradeship is the essential club spirit.

Pull together and pull hard, and 4WN will continue to occupy its present position among the radio clubs of Queensland.

**HUBERT KINGTON,**  
President.

Nothing could give me greater pleasure than to extend to co-members of the Woolloowin Radio Club my most hearty congratulations and "many happy returns" on this, the occasion of their Second Birthday.

It has been my pleasure to attend many of the meetings, and the wonderful spirit of good fellowship and enthusiasm shown between the member's contributes in no small measure to the Club's success as a body.

**H. F. COFFEY,**  
O/C V.I.B. Radio



# How to Make an Inexpensive 'B' Battery from Your Old Dry Cells

By "ZINC" (4WN).

The majority of wireless enthusiasts who are using valve receivers have no doubt been troubled at some time or other with their source of high tension supply. Some, whose pockets would permit, have invested in a "B" battery of the accumulator type, but still the most popular "B" battery seems to be of the "dry" type. The latter type has often given good service but in careless hands its useful life is usually much shorter than it ought to be, and it quickly acquires the title of "Dud."

Any reader who possesses a little patience can make good use of his "dud" batteries if he follows these instructions, and will provide himself with a high tension battery which costs practically nothing to run.

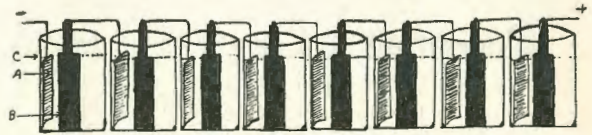
Break up your old "B" battery (don't use the axe), and take out each cell. Strip off the zinc case from each cell and you will find a carbon rod with a brass cap protruding from a white bag. Be careful when removing the zinc that you do not break the carbon rods or cut the white bags. Clean off what you can of the paste that adheres to the bags, the quickest way being to wash them. Now gather up as many pots or jars as you will require, reckoning on each pot supplying one (1) volt. Any vessel of about 2oz. fluid capacity and not less than 1½ inches deep will suit—such as Vaseline pots, Marmite or Meat extract jars, etc. If you are not particular about appearances in the finished job the pots need not all be the same. The next step is to obtain your negative plates. Pay a visit to the nearest plumber or metal worker and get some sheet zinc. Either 14 or 16 oz. zinc will be best and will cost only about 10d. per pound. Allowing each negative plate to be 1½ inches square, a simple calculation will tell you how much zinc you will want for the particular battery you are making.

If your pots or jars will not take a plate 1½ inches wide then reduce the width to suit. With a piece of sandpaper clean up a spot on the plate to facilitate soldering your connecting wires.

By the time you have done this much your positive elements will be dry and easy to handle. In every case the brass cap on top of the carbon rods is already tinned, so just clean off any grease or dirt from them. Now for your connecting wires, the length of which will depend on the jars you are using. Use fairly stiff wire like square bus bar wire and have it cut into proper lengths. One end of these wires must be soldered to the zinc plates and the other end to the brass caps. Soldering to the zinc plate is easy enough, but you may find the brass caps somewhat more difficult. In that case follow this tip. Heat and clean the soldering iron and place it on the bench (of course on some support that will not burn). Touch it with the solder so as to leave a bead on it, smear the wire end with Fluxite and hold wire in your right hand. With the carbon rod in the left hand and upside down touch

the bead of solder with the brass cap. As soon as the solder runs insert the wire end and lift the whole away from the iron. In a couple of seconds you will have a joint that is secure and neat. With a little practice this process will become simple and speedy.

Having a zinc plate and a carbon rod now connected together, bend the connecting wire so that the carbon rod is in one jar and the plate in the next. The first jar should have a zinc plate free and the last one a carbon rod free, these forming the negative and positive terminals respectively. The diagram will make this clear.



(A) Zinc Plate, (B) Carbon Rod, (C) Level of Solution.

Buy a few shillings worth of Sal Ammoniac and make a saturated solution by dissolving it in cold water until the water refuses to take any more into solution. Add as much water again to make the solution semi-saturated, and fill each jar not quite up to the shoulders of the bags. Your battery is now ready for use and except that water must be added to the jars as it evaporates, it will require no attention for a long time, that is, until the zinc plates have been used up.

If you use 14 or 16 oz. zinc this should not happen for at least eighteen months. You can count on each cell supplying at least one (1) volt and as there is no load on the battery when used for plate current in a receiver the cells will not polarise. If properly constructed the battery will give you efficient service for a long time and will cost nothing to run.

Various modifications will suggest themselves to constructors to suit their individual requirements, and the battery is well worth a little patience to make. Try it!



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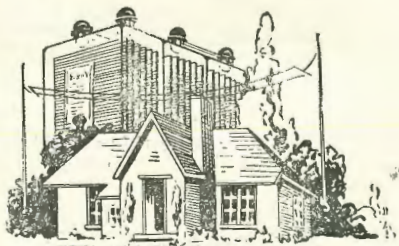
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## "JOEYS"

By SHAW TED GRIDLEAK (4WN).

"Joeys"—the word conjures up visions of sylvan glades and the glorious magnificence of the Australian bush and one thinks of "Kangas," particularly the female of the species equipped with a capacity house in the way of travelling nurseries. But no—although the "Joeys" about whom I write may remind one of the nursery by reason of the howls thereof, still the aviary is the more appropriate term, and the bush has no part therein.

To break the news gently, let it be said that the "Joeys" I mention are howling, oscillating, nerve-racking, valves used for widespread dissemination of more or less good imitation of interesting conversation. (Felicitations!—Ed.).

During the past few months I have acquired the habit of studying the characteristics of the "Joey" species in its own habitat and I have now a fairly complete naturalist's museum of them.

The first one that comes to mind when I think of "Joeys" is one 4AD—his gozouta has chronic asthma—it must have or else there is sand in his aerial wires to make the note so rough. But why speak of the past? Let us advance with the times like 4AD and develop a real NPM-like note; real dyed-in-the-wool Yank, hi, hi. It's a good thing Fords are cheap—it's so easy to rob them of their spark coils—? He apparently is optimistic—heard him call CQ, UA offer at strength R .096 at a distance of — but that would be telling my QRA, would it not?

Next is 4RG. He owes me two pairs of fones and one perfectly good loud-speaker broken by his QSA vy His note is good and he has read the collection of dots and dashes designed by one Morse, and he knows it.

4OK is another of the denizens of the 40 metro band who puts out a good note and uses good Morse.

We have a chirpy friend on 30/40—4 MO (no! no relation to the famous Yiddish comedian). When he lets loose it sounds like the nightingale's song from English 2LO (no! my P-1 does not get England but I've read about it in books).

One 4PP would do better if he put an "I" in his call-sign for he sure does give one the PIP! 'Tis said that friend 4PP has flattened 18.6 pairs of platinum contact points on his key in 9 days—probably he shares in a junk store.

the rag with 4RG at times. 'Tis reported that he sends everything twice. Have heard him chewing the rag with 4 RG at times. 'Tis reported that he is a keen student of the mail lists, especially when Yankee letters are due—QSL's or QSO o.m. hi, hi?)

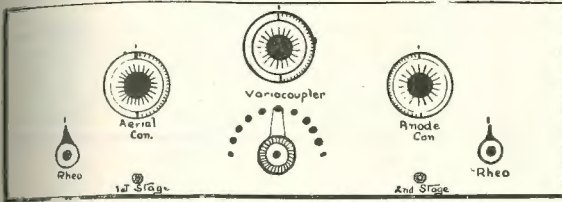
Amongst those who fly high and make a noise about 80 metres are 4RE, 4RT, and 4RP. This last ham is quite an adept at fone, too, on 240—metres, not volts. He is responsible to a large extent for the paucity of attendance at the local churches, for who would go to the church when, by tuning in to 240 metres 4RP can be heard on fone rendering a most erudite treatise on that much discussed subject "Should South Sea Islanders wear Huckabuck Waistcoats?" Friends and others I ask you!!!

Another "Joey"—but no! the tempest fidgets (and so do the readers—Ed.) and I must QRT nw o.ms. C. U.agn. 73's fm hr. ...—

# A Simple and Efficient Reflex Set

By "FORWEN" (4WN)

It is estimated that fully 80 per cent. of the present license holders in Brisbane district are using crystal sets. A proportion of these have, no doubt, already built or purchased amplifiers. This article is written for those who are prepared to go to a little extra trouble in rebuilding their crystal or valve sets. Before proceeding with the description of the circuit I will briefly explain what a "reflex" circuit is.



Layout for Front Panel

A reflex circuit is one in which the valve or valves used serve a double purpose in amplifying at both radio and audio frequency at the same time. The principle is quite simple, and consists of applying to the grid of the valve currents of both radio and audio frequency which are amplified in this same way without interfering with each other. The application of this principle can be effected in many ways, and with more than one valve, but any valve used for this double purpose can only be used as an amplifier, a separate means being required for rectification, for which either a valve or crystal may be used.

Many people still regard reflex receivers as being in the experimental stage, but I am sure that if the circuit given below is tried they would be convinced that extremely satisfactory results can be obtained from this type of circuit. A reflex circuit certainly can consist of more than one or two valves, but I would strongly advise those interested to experiment with the smaller circuits first.

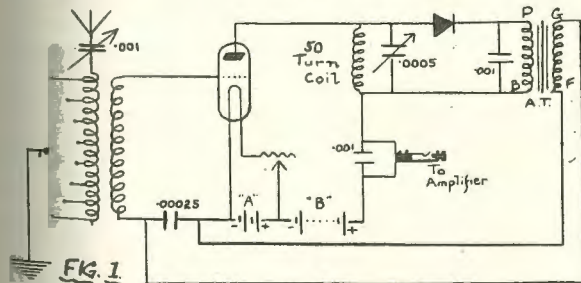


FIG. 1

The set described comprises a one valve and crystal reflex circuit with an ordinary stage of audio frequency amplification added. It is not claimed to be very selective, but Sydney, Melbourne, and Adelaide stations are received with good loud speaker strength. The writer considers this circuit an improvement on the ST.100 circuit, which was tried before finally recommending this one to readers.

The following is the list of parts required:—

- 1 panel, 20 x 8 (or smaller)
- 1 piece bakelite (15 x 2)
- 1 wood baseboard
- 1 variocoupler
- 1 .001 variable condenser
- 1 .0005 variable condenser
- 1 each .003, .001, .00025 fixed condensers
- 2 audio frequency transformers
- 1 crystal detector
- 1 panel coil holder
- 1 50-turn honeycomb coil
- 2 valves
- 2 valve sockets
- 2 rheostats
- Plugs, jacks, wire, and terminals

A smaller panel may be used but would tend to crowd the set. Two coupled honeycomb coils may also be substituted for the variocoupler.

Fig. 1 shows the reflex portion only. This will suffice for those who wish to listen to the local station only, as on this circuit 4QG can be received with good volume on the speaker.

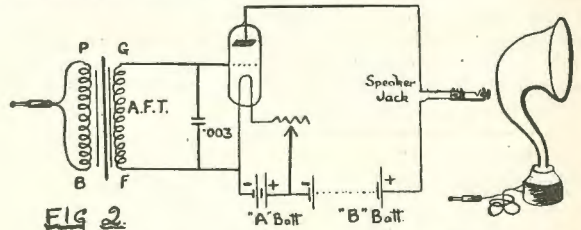


FIG. 2

### Extra Stage Audio-Frequency Amplification

Fig. 2 shows the extra audio frequency stage for southern stations. The plug, as shown, is used when this stage is built as a separate unit to the first stage.

Fig. 3 shows the connections of the double circuit jack which is used in the combined circuit between the reflex and the extra audio stages.

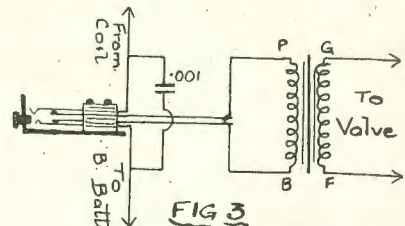


FIG. 3

When wiring the circuit, complete the "A" and "B" battery connections first, as this will simplify the remaining wiring.

A series-parallel switch may be added in the aerial circuit if desired. Either a Perikon or single crystal may be used in the circuit—but be sure it is a good one.

If there are any points upon which the reader is not too clear, he is invited to write "Forwen," care of this journal, enclosing stamped addressed envelope for reply. Reports of results achieved with this circuit would also be appreciated.

# A Trouble-Free Earth System

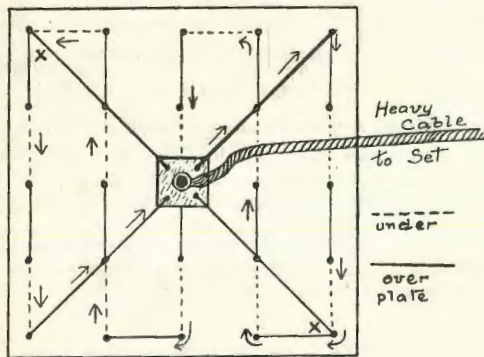
By "EARTH" (4WN).

It is surprising the number of persons who are operating radio sets connected to bad or indifferent earth systems. The majority will be found to have their receivers connected to a water pipe or even have a piece of pipe driven a few feet into the ground. These types of earth connections are all right in a way but they are by no means perfect.

An earth system, which is constructed as follows, is highly efficient and when once it is made it will never require attention.

Obtain a piece of perforated zinc sheet or brass gauze 3ft. by 3ft. or larger if possible, and a coil of 7-22 bare copper wire. Also two pieces of copper or brass about two or three inches square with a hole through the middle of each and a small brass bolt and nut to fit the hole and clamp the plates together.

Divide the gauze up into six or eight inch squares leaving a margin of a few inches round the edge. At the corner of each of these squares punch a hole just large enough to thread the wire through. Also make a hole large enough for the bolt to pass through right in the middle of the sheet of gauze.



Commence at one corner leaving spare sufficient wire to reach the hole made for the bolt in the centre of gauze. Then proceed to thread the wire alternately in and out of the holes in the direction indicated by the arrows in the diagram. Leave a similar length of wire free at the finish of the lacing. Now solder all the joints where the wire passes through the gauze and also solder on wires at the points marked x.

Fasten the two copper plates one on each side of the gauze by means of the bolt. Then solder the wires from the corners to the centre plate.

For an earth lead from the receiving set it is advisable to use a piece of 7-20 or 7-16 ga. insulated cable. One end of this should be soldered to the

brass plate on the earth mat and then screwed down by means of the nut and a brass washer.

This will absolutely prevent the soldered connection to the plate from becoming broken due to a sudden pull and will make a better electrical connection.

The earth mat should be buried to a depth of three feet or more, preferably more, and may be laid flat or edge-wise in the hole. It is best to bury the mat in a wet place, preferably under or near the aerial lead in. Keep the lead from the set as short as possible.

If these instructions are carried out the owner of the set will be agreeably surprised at the improved selectivity and volume of his set.

Remember! You may not be able to get a good aerial but there is absolutely no excuse for having a bad earth.

## Crystal Users

Valve amplifier, to give you loud speaker results from your present set, £4/10/-.

### Loud Speakers—

|                           |        |
|---------------------------|--------|
| Spitfire Baby . . . . .   | £1 5 0 |
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| B.T.H. Cr . . . . .       | 4 10 0 |
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### 'Phones—

|                              |        |
|------------------------------|--------|
| Spitfire, per pair . . . . . | 0 17 6 |
| Rico, per pair . . . . .     | 1 2 6  |
| Siemens, per pair . . . . .  | 1 5 0  |
| Brandes, per pair . . . . .  | 1 10 0 |

Glass enclosed Barrel Detectors, 3/6 each.

## J. T. Greenlees & Co.

Albert House, Ann Street, Brisbane  
(Round the corner from the Tivoli Theatre)



of any magnitude is in your key circuit. You can easily guess the rest of the answer. If you can't, well, go back to your crystal set and start again! Or, better still, join the local club.

And the next question, Mr. Radio Inspector?

- (f) Explain the action of a Grid Condenser in the usual Detector Circuit. Everyone knows that a condenser is necessary (or virtually so) in the present hook-ups but how many have reasoned out the cause and effect of it? Think it over, O.M.; it's not so very difficult.

Now we have another one—

- (g) Draw a diagram of a device suitable for indicating the frequency of the circulating current in the Antenna Circuit. What's wrong, gang, with describing the ordinary Heterodyne Wave-meter? You are, I assume, all of you, reasonably familiar with it, or at least know enough about it to know where to get further knowledge.

Now let me see; I've given examples of six questions that have been recently set. Surely nobody who is keen on getting (legitimately) on the air is going to jib at tackling a paper if such is a fair average sample of the usual run of questions. As the Radio Inspector said, "The exam. is not intended as a test for professional engineers, but is used solely to ensure that every Australian transmitter is

bona-fide, and is sufficiently versed in wireless theory and practice to ensure his operating his station in an efficient manner." No one will gainsay the fact that Australian amateur transmission is as clean cut and efficient as that of the keypounders in any other part of the world, and streets ahead of most, and the P.M.G.'s Department will have the strong support of every right-minded ham or budding ham in its efforts to maintain the status.

Now, I've tried to show that the A.O.P.C. exam., hitherto so clouded in mystery, is not such a very terrible trial. It is a reasonably wide examination, reasonably conducted.

So now, what about it? Let's go and see the Radio Inspector and fix a date for our own little session. Anyhow, let's dig out our old copy of James, and have a look at what he says. Here you have some of the chapter headings: Inductance Coils and Condensers, The Supply of Power, Rectifiers, The 3-Electrode Valve as an Oscillator, and so on, and the book is not very big.

Come along, Queensland—up and do it! If I know anything, the Woolloowin Club is going to put forward a few dozen candidates some time soon, and then the call sign 4WN won't rust during the enforced business absences in other parts of our state of our operator, old 4CW.

## You'll spend less for batteries— You'll have better reception—

When you buy Willard's you buy Batteries that last for years. Your investment in Battery economy is an investment in better reception, too, for these

Batteries are rechargeable. No need to tell the difference this makes in the quality of reception.

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Where Adelaide and Boundary  
Streets meet—Brisbane.

# Willard

# RADIO BATTERIES

# Jazz and Jollity

## brought to your home via wireless

Only perfect reception will give you the uninterrupted dance and Philips valves will give you perfect reception. The B406 is the new wonder valve, designed for use with a 4-volt accumulator, and controlled by a rheostat of at least 12 ohms resistance.

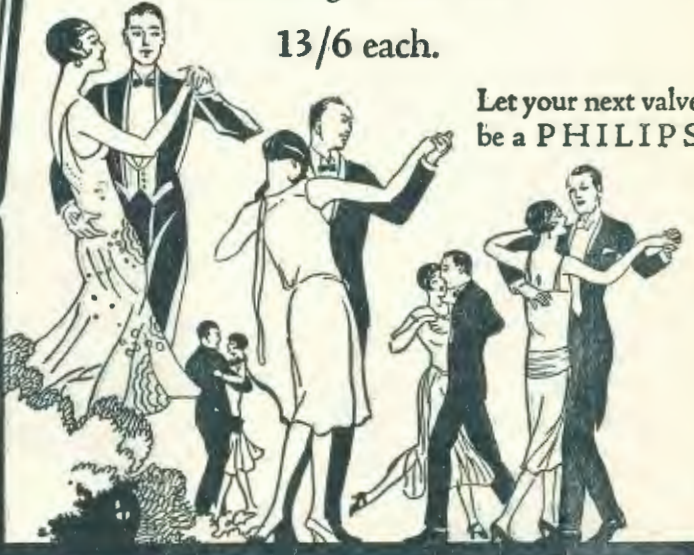
The unique purity of tone and wonderful volume given with this valve combined with its low filament consumption of one-tenth amp. make this valve perhaps the most economical, considering its accomplishments, on the market.

The main characteristics are as follows :

- Filament voltage, 3.4-4.0 volts.
- Filament current, 0.1 amp.
- Saturation current, 30 m.a.
- Plate voltage, 20-120 volts.

13/6 each.

Let your next valve be a PHILIPS



# Wireless House Ltd. Still Leads the Way!

You can't expect first-class results from second-grade apparatus. The man who singles out the cheapest radio set in his quest for good radio entertainment is practising false economy. He is blinding himself and denying himself of the real joy of good radio.

Wireless House Ltd. do not profess to be the "cheap Jacks" of Brisbane. But they DO profess to offer Quality Apparatus at the very lowest prices Quality will allow.

## DULCEPHONE Receivers



### Three Valve Dulcephone

This Model employs two stages of audio frequency amplification, and is capable of operating any type of loud speaker with full volume.

By careful attention to detail, the tendency to distort which is manifest in many of the sets in use to-day, has been eliminated.

As an all round receiver it leaves little to be desired and is especially suitable for the country where the use of dry cells is essential.

In Polished Rosewood Cabinet:—

Price, without Accessories . . . . . **£14/0/0**  
 Price, with all Accessories, including A.R.111 Junior Amplion Loud Speaker . . . . . **£27/0/0**

### Four Valve Dulcephone

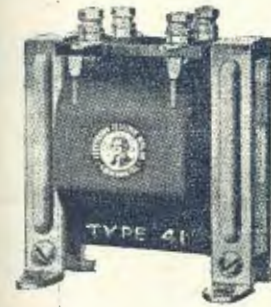
For those listeners who are located at long distances from the Broadcasting Stations, we have developed this Four Valve Model. In order to increase the receiving range, one stage of high frequency amplification has been introduced. This arrangement allows of reception over great distances without the tendency to distort or howl. Its simplicity of control enables the merest novice to obtain maximum results in a very short time.

In Polished Rosewood Cabinet:—

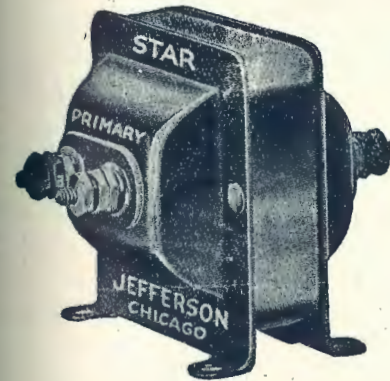
Price, without Accessories . . . . . **£25/0/0**  
 Price, with all Accessories, including 6 Volt Accumulator and A.R. 15 Amplion Loud Speaker . . . . . **£42/0/0**



Super-selective "Dulcephone," 5-valve set. Complete, £60.  
 Super-selective "Dulcephone," 6-valve set. Complete, £68.  
 "Igranic" 6-valve Supersonic Heterodyne set, wavelength range 200 to 2,000 metres. Complete, £75.



Jefferson 41 Audio Frequency Transformer



Jefferson Star Audio Frequency Transformer



A.R.14

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| Jefferson 38, ratio 6 to 1, each . . . . .                  | 1 | 5  | 0  |
| Jefferson Star, ratio 3 to 1, each . . . . .                | 0 | 18 | 6  |
| Jefferson Star, ratio 6 to 1, each . . . . .                | 0 | 18 | 6  |
| Emmco, ratio 3.5 to 1, each . . . . .                       | 1 | 1  | 0  |
| Emmco, ratio 5 to 1, each . . . . .                         | 1 | 1  | 0  |
| All-American, ratio 5 to 1, each . . . . .                  | 1 | 15 | 0  |
| All-American, ratio 5 to 1, each . . . . .                  | 1 | 15 | 0  |
| All-American, Push Pull, per pair . . . . .                 | 4 | 10 | 0  |
| Rauland Lyric, each . . . . .                               | 3 | 5  | 0  |
| A.W.A., ratio 3.5 to 1, each . . . . .                      | 1 | 5  | 0  |
| A.W.A., ratio 5 to 1, each . . . . .                        | 1 | 5  | 0  |
| A.W.A., Push Pull, per pair . . . . .                       | 4 | 0  | 0  |
| Marconi "Ideal," ratio 4 to 1, each . . . . .               | 3 | 5  | 0  |
| Marconi "Ideal," ratio 6 to 1, each . . . . .               | 3 | 5  | 0  |
| R.L., ratio 4.6 to 1, each . . . . .                        | 2 | 2  | 6  |
| Igranic, ratio 3 to 1, each . . . . .                       | 1 | 9  | 3  |
| Igranic, ratio 5 to 1, each . . . . .                       | 1 | 11 | 6  |
| Igranic Telephone Transformer, ratio 1 to 1, each . . . . . | 1 | 7  | 9  |
| Igranic Telephone Transformer, ratio 9 to 1, each . . . . . | 1 | 7  | 9  |
| Ferranti . . . . .  | 2 | 2  | 6  |

## Brandes



30/-  
Matched Tone

Radio Headsets

### 'Phones

|   |   |    |   |
|---|---|----|---|
| Brandes Matched Tone, per pair . . . . .        | 1 | 10 | 0 |
| Sterling 4000 ohm. per pair . . . . .           | 1 | 17 | 6 |
| Murdock 3000 ohm., per pair . . . . .           | 0 | 15 | 6 |
| Trimm Dependable, 2400 ohm., per pair . . . . . | 1 | 2  | 6 |
| Scientific 300 ohm., per pair . . . . .         | 0 | 17 | 6 |
| Ericson . . . . .                               | 1 | 7  | 6 |
| Browns A Type, 4000 ohm. . . . .                | 5 | 5  | 0 |
| Browns F Type Featherweight, 4000 ohm . . . . . | 1 | 12 | 6 |
| Baldwin, Type C . . . . .                       | 1 | 19 | 6 |



A.R.19

### Amplion Loud Speakers

|  |   |    |   |
|--|---|----|---|
| A.R. 111 JUNIOR, each . . . . .                | 3 | 10 | 0 |
| A.R. 102 DRAGONFLY, each . . . . .             | 1 | 5  | 0 |
| A.R. 114 JUNIOR DE LUXE, each . . . . .        | 3 | 15 | 0 |
| A.R. 19 DRAGON, each . . . . .                 | 6 | 10 | 0 |
| A.R. 88 MUSIC MASTER, each . . . . .           | 6 | 10 | 0 |
| A.R. 23 Concert Model, each . . . . .          | 9 | 10 | 0 |
| A.R. 67 Gramophone Attachment, each . . . . .  | 2 | 15 | 0 |
| A.R. 35 Gramophone Attachment, each . . . . .  | 3 | 15 | 0 |
| A.R. 61 PORTABLE FOLDING MODEL, each . . . . . | 8 | 10 | 0 |
| A.R. 38 Junior . . . . .                       | 3 | 0  | 0 |
| R.S. 1 Junior . . . . .                        | 6 | 10 | 0 |
| R.S. 2 Junior . . . . .                        | 9 | 5  | 0 |

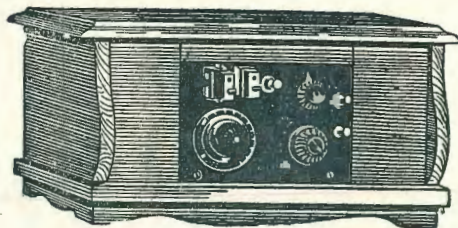
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**Price  
Complete  
£12/ 10/-**

A 2-VALVE Set that represents greater value in Wireless Sets than has ever been offered before! The Duodex has been built to meet the demand for a low-priced Receiver on which to hear 4QG Programmes. This Set gives beautifully clear reception, with tone and volume, on 4QG, and will also bring in Southern Stations. It operates from 200 to 2000 metre wave lengths. The Duodex has been designed entirely by our Radio Engineer, and is built throughout of good materials.

Everything necessary for the initial equipment of a Radio Set can be procured from Chandler's. A large assortment of Sets and Accessories from the leading makers await your choice.

The Receiver is entirely self-contained, having built-in A and B Batteries, and is mounted in a handsome cabinet of Queensland Maple. It attains the dignity of a piece of furniture befitting any room.

The Set is sold complete with Valves, Loud Speaker, A and B Batteries, Aerial Equipment and Earth Wire. No extras are required.

See it and test it in our Showrooms.

# J. B. CHANDLER & CO.

"For Radio Service"

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(next Allan & Stark)

S.A.S.

# Below 5 Metres

By "CONTACT" (4WN)

If the every-day radio man were asked the meaning of the term "Short-Wave," he would probably answer to the effect that it was a wave with a length of between five and one hundred metres. Well, with regard to radio he is perhaps right, but he little realises that such wavelengths are, compared with those of some of the vibrations of the ether, extremely long.

We probably all know that when we speak we cause certain organs in our throats to set up vibrations or, perhaps as they are more popularly called, waves, in the surrounding air, which, spreading out in all directions, resemble somewhat the waves produced on the surface of a pond when a stone is dropped into it. Although these air waves are similar to the water waves in many respects, the great difference lies in the fact that the waves on the water are apparently up and down movements of the surface, while the sound waves not being on the surface of the air can hardly be pictured in the same manner. It may be rather difficult to imagine wave motion through the interior of a substance, but what actually happens is that the wave moves outward in a series of bands of compression and rarefaction of the particles of the substance, in this case air.

Now a peculiar thing about this wave motion is that although the wave itself moves, the actual particles of material which are carrying the wave do not, or, at least, not to any appreciable extent. There will be a slight movement either in a direction at right angles to the direction of movement of the wave or in the same direction as it. This movement, however, lasts only as long as the wave passes any given points. We can see this quite easily by allowing a cork to float on the surface of a pool of water and dropping a stone into the water close by. The wave produced by the stone will strike the cork, which will rise, and fall again as the wave passes. Calculation and accurate measuring will, however, prove that the cork has hardly moved from its previous position. From this we can therefore see that wave-motion consists merely of motion transmitted from one particle to another.

Now the sound-waves which we have been studying are vibrations of the air. Let us now turn our attention to vibrations of the ether. The question naturally arises—"What is the ether?" Well it almost defies definition, but suffice it to say that it is an all-prevailing medium capable of transmitting wave motion. It is supposed to fill in the spaces between electrons and the outer space of the universe. As a matter of fact we may perhaps look upon the universe as floating in a sea of ether.

When ether waves are mentioned, the ham usually thinks of radio waves. Now the wavelength of radio waves is very long. That is to say, to put it broadly, the distance between the crest of one wave and that of the following wave is comparatively long. Wavelength or wavelength is usually measured in metres and may in every day radio communication range from five metres to twenty-five thousand metres. On

all these wave-lengths and in fact on all wavelengths the ether vibrations move with the same velocity, i.e. 186,000 miles per second.

Now suppose we could design a transmitting machine which would, at our will, transmit waves into the ether at any length required. Let us operate this machine on a long wavelength, say 25,000 metres. We do not directly hear or see these waves, but, by using a radio receiver we could detect the waves and hear the speech or music that may be carried upon them. We will now reduce the wavelength of this wave-producer or transmitter, and as we do so, adjust the wave-detecting device or receiver so as to have it always detecting the transmitted waves.

Down comes the length of the waves and still we can detect them with the same apparatus and without trouble. Let us suppose the wavelength has now become as low as 300 metres. At this wavelength we may notice something. Although the receiver detects the waves as before, it is more difficult to adjust it to the exact wavelength of the transmitter. In fact, a change in the wave of 20 metres here makes a very much greater change in loudness of detected waves than a change of .200 on the longer waves. (Hams who have listened in between 10,000 metres and 25,000 metres realise this to be a fact.)

Dropping the wavelength still further, we notice that the adjustment of the detecting apparatus is getting increasingly difficult. At about 3 metres we find that it is necessary to do away with the receiver we have been using and resort to one of different design. Possibly we could use an old Hertz Resonator, which consists of a single turn of wire broken by some high-frequency circuit indicating instrument. Thus we may, by adjusting the diameter of the turn, be able to detect the wave of a length of perhaps .25 metre. Just think, .25 metre!!

Still reducing the wavelength, we arrive at the one four-hundredth of a metre band. This is possibly the shortest wave yet detected by radio instruments as a radio wave. In actual testing a Welsbach burner was used as a transmitter, and a mirror with the silvering cut into sections one thousandth of an inch square for a receiver were used in the experiment, but actual details are scarce. If it were possible to detect waves of a length of about one-thousandth of a metre we would be detecting the shortest radio waves it would be possible to produce.

But let us go still shorter. Radio waves? No! We get a totally different effect now. Don't forget we are still producing ether waves, and they are still moving at the same velocity, but the only difference is that they are of a different length. We can now detect these waves with our own bodies or by a thermometer or any other heat-detecting or measuring device, for they are heat waves. Let them strike our skin, and we feel—heat. Let them strike a piece of metal, and it becomes hot, for the effect of these

waves is totally different from that of the radio wave.

These heat waves can be produced on a great variety of different wave lengths; in fact, they may vary in length from one ten-thousandth of a metre to one five-millionth of a metre. It is by means of this band of wave lengths that we feel the life-giving warmth of the sun.

Now suppose we start at the top of this band of wave lengths and gradually decrease the length. When we get down towards the shorter end another effect creeps in. At about one three-millionth of a metre, as well as detecting the waves by their heating effects, we can also detect them by our sight, for they have their effect upon our eyes. They are light waves, and their effect on our eyes causes us the sensation of seeing a red colour. Let us take a piece of iron, and heat it in a flame. It will heat up and radiate waves which will, as well as being heat waves, be light waves, and the iron will glow at red heat. By heating it still more the wave length, and thus the colour, changes, the wave, however, becoming rather complex.

The most sensitive detector of light waves is probably the eye, but sensitive though it may be, it is only sensitive to waves of a limited band of wave lengths, from 1.5 millionth part of a metre to 1-1250 thousandth part of a metre in length. Now, the colour of light changes with its wave length, the longest wave being seen as red and the shortest as violet. The wave length just below our range of vision is known as the ultra-violet, and that just above as infra red.

Reducing the radiated wave of our transmitter still further in length, we have no means of detecting the waves until we suddenly find that, although we cannot see them, they will effect certain chemicals, so that we can photograph them. These waves have great penetrating power, and are known as X-rays. They vary in length from about one ten-millionth of a metre to one one-hundred millionth of a metre. How is this for a short wave length? We can go still further down the scale and get Gamma rays, etc., but space does not permit.

This article touches but lightly upon the wonderful effects of ether vibrations. Of this marvellous branch of science the world knows practically nothing as yet, and who can guess? We may even discover the secret of life itself from this marvellous ether.

At a recent club meeting, one Blaikie  
To the gang there assembled thus Spakie:  
"Though the club's got a set,  
It won't work, you bet,  
For the top-gear's decidedly Shaikie."

On the roll there's a Johnny named Love,  
As gentle and calm as a Dove;  
But his 201A  
Exploded one day;  
Then his language—Oh, Heavens Above!!

Listen-in  
to the  
Messages  
from the  
Ships and  
Oversea  
Stations



## LEARN MORSE

Our Evening Course will show you how

Instructor: Mr. H. L. Miller, late of  
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## OVERSIZE Westinghouse Batteries

Built with more plate  
area than ordinary types

Queensland Distributors—

**Bizzy Cycle-Motor Works Ltd.**

Roma Street, Brisbane

"The House of Westinghouse"

# The Wooloowin Radio Club 1924-1926

By THE SECRETARY (4WN).

Two years ago a small band of wireless enthusiasts, numbering just thirteen (13), met at a suburban shop to discuss the question of forming a "Radio" Club.

From the date of that meeting, 4th August, 1924, the Wooloowin Radio Club has continued to prosper, which has been due to individual and concerted enthusiasm. Every member from the president to the youngest junior seems to possess the true club spirit, which is the greatest asset any such society could possess. For the benefit of our many friends we take this opportunity to briefly review our activities during the past two years.

From the commencement of our existence as a club we have always endeavoured to stimulate the interest of wireless enthusiasts in the club movement. When only three weeks old the club (by kind permission of the Windsor Show Committee) staged an exhibit of amateur-built radio sets and material at the Windsor Show. A similar exhibit was staged at the same show in the following year.

Debates were held between this club and the South Brisbane Club, which were the means of forming a close friendship between the two clubs.

In April, 1925, a move was made by the club to secure the Australian General Electric Co. film, "The Wizardry of Wireless," for exhibition in Brisbane. This was duly accomplished by the All Clubs' Night of 13th August, 1925, when a Committee representative of eight radio clubs, and supported by the S.C.A. (for the A.G.E. Co.), Mr. J. W. Robinson (4QG), and Professor Parnell (Queensland University) presented the film to some 700 people at the Albert Hall, Brisbane.

An official visit was paid to the Ipswich Radio Club during July, 1925, which they returned in November, 1925. We again visited them at the end of November, 1925. These visits were enjoyed by all, and further promoted a good inter-club feeling.

A pleasant visit was also later paid to Graceville Radio Club soon after its formation.

We must not forget to mention that in September, 1925, we accepted the challenge of our good friend 4CW to make a name for ourselves as cricketers and to report that we did not succeed. It was, however, a day well spent in excellent company.

In order to celebrate our first anniversary our President (Mr. H. Kington) invited our members and the officers of other clubs to an evening at his residence at Toombul in August of last year. A very enjoyable evening was spent by all who accepted the invitation.

We are grateful to both Mrs. E. M. Kington and Mr. G. W. Jear for the use of temporary rooms before the club obtained a permanent home, which, through the kindness of Mr. F. J. Thomas, we now possess. Practically all the local radio clubs have been welcomed here.

We have been honoured by visits from Mr. J. T. Reid (2JR), who delivered an interesting lecture on "Short Wave Work," and from Mr. S. Thrum (Croydon Radio Club), who gave us much interesting information concerning N.S.W. activities. No opportunity has been lost to study the theory of wireless, and technical lectures occupy most of the syllabus from time to time.

Some time ago the matter of interference by 4QG with the reception of southern broadcasting stations was brought forward on behalf of broadcast listeners. It is fully realised that this interference is not altogether the fault of 4QG, but is due to the wavelengths of the majority of Australian broadcast stations being confined to a far too narrow band. The metropolitan radio clubs were once again called together to discuss the matter, and a committee was formed to deal with it. A petition was prepared, but in view of the fact that the question is under consideration by the authorities in Melbourne, further action has been withheld for the time being.

The social aspect of the club has not been overlooked, and several social gatherings have been held during the period under review. We cannot conclude without referring to the assistance rendered to us by several prominent personages, including the P.M.G. Department, Melbourne, through Mr. J. Malone and the local Radio Inspectors, Mr. W. Finney and Mr. T. Armstrong. We are under a debt of gratitude to our good friend and adviser, Mr. H. F. Coffey, of V.I.B., also Mr. J. W. Robinson, of 4QG, Mr. L. L. Read, of the Read Press Ltd., and Mr. A. T. Bartlett (Editor, Queensland Radio News), who have given us practical assistance.

Others too numerous to mention in detail have given us encouragement, and our thanks are extended to all of them. We are not satisfied with what we have been able to do in the past, and will strive to produce a more interesting series of activities to report at our third anniversary.

## Afternoon Tea and Supper at SYRMIS'



When in town of an evening call at Syrmis Cafe for refreshments, and be entertained by 4QG's Studio music broadcasted through our Super Six Receiver.

*Dainty Afternoon Teas a Speciality*

**SYRMIS CAFE**  
GEORGE STREET, BRISBANE.

# Always Put the Best into Your Radio Set

**I**T PAYS! Poor parts can only give poor reception, no matter what type of circuit you employ. And, as in the case of Emmco Radio Products, where local and mass production enable it, high quality parts costs no more than the inferior imported goods.

## The New EMMCO Transformer

The New Emmco Transformer, with its rugged build and handsome appearance, is a good example of the superior quality work that modern engineering methods can produce.

Thousands of Radio users to-day are finding that, in comparison with other types, for really good value and absolute dependability, the Emmco Transformer has no equal.

Obtainable in Ratios  $3\frac{1}{2}$  to 1 and 5 to 1, also 2 to 1 and  $7\frac{1}{2}$  to 1.

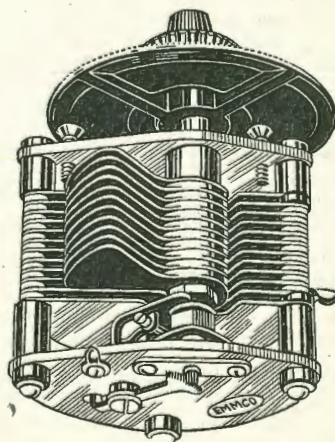
PRICE . . . . . 21/-

### EMMCO CONDENSERS.

Whether you are out after a distant station or whether you are searching on a crowded wave-band for your local station, fine tuning is the thing that counts. And for fine tuning and selectivity the condensers must be built with absolute insulation and the most minute vernier adjustment. These are two of the features which contribute to the efficiency of Emmco Condensers. They add to the selectivity of any receiver.

#### PRICES.

| Vernier Type.         | Plain Type.           |
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| .00025 . . . . . 20/- | .00025 . . . . . 13/6 |
| .0005 . . . . . 21/-  | .0005 . . . . . 15/-  |



See Them at Your Dealer's

Manufactured by

**Electricity Meter Manufacturing Company Limited**  
SYDNEY, N.S.W.



Scindik, Zyndk, Tsindyk: And here's the spark coil—and the helix—and the milliammeter—and the valve socket. (Gear is placed on bench, and Syndic re-wires 4WN's transmitter.)

Tchearman (faintly): Th-th-thank you!

(Enter Gang amid much QRM.)

At about 8.36 the Club settles down to business.

Tchearman (repeating an oft-quoted phrase): Silence, gentlemen. Mr. Zek Tre, will you read the minutes of the previous meeting?

Zek Tre (searching for minute book): Very well, Mr. Tchearman! (Book is eventually found on pew recently vacated by Dhog. Reads the minutes.)

Tchearman (in one breath): Any discussion on the minutes—will someone move the minutes as read be confirmed—thank you—any seconder—thank you—all in favour—carried!

Zek Tre (writing fast)—Carried!

Tchearman: Call the roll! (Roll is called by Zek Tre. Tchearman unostentatiously counts heads.)

Zek Tre: Seventeen present, Mr. Tchearman!

Tchearman: No, six! (Mathematical divergence between Tchearman and Zek Tre until it is established that Zek Tre has counted in all patrons, vice-presidents, honorary members and ladies' committee-women. Peace is restored, and general QRM runs through a choke coil.)

Tchearman: Any business for the meeting?

Tsindyk: Yes, Mr. Tchearman! I move that the Co-Res be approached with a request that a Klub Report should be submitted at least once a month to the "Queensland Radio News" for publication, and that the same should be lodged not later than the 20th of each month. You know, sir, that when I was Press Correspondent the reports were never late. (Murmurs of incredulity from gang.)

Syndic: I second the motion.

Zyndk and Scindik: We concur.

Gang: Carried!

Co. Res (seeing work in the offing): We object, Mr. Tchearman; we—

Tchearman (applying the gag): The matter is closed.

(Abolition of Co. Res.)

Tchearman: Any further matters for the meeting? Nothing? Very well, the business of the evening is a lecture on "Hysterical Osses," by Mr. Syndic.

Curtain! End of First Howl.

### HOWL THE SECOND.

Time: Later.

Extract from Club Minute Book, May 27, 1926. Mr. U. F. Kenna then gave a most interesting lecture on "Hysteresis and Hysteresis Losses"

Syndic (lecturing): Now, gentlemen, an Oss is a gadget invented by man to enable him to do less

work more easily. There are several types of Oss in general use, but I intend to-night to deal with the Oss as laid down by the Berne Convention, known as the International Oss. The International Oss, like the similar unit, the Caharte Oss, is in appearance a cylindrical body supported at four points. It has an input at one end and a vernier control at the other. The cylindrical body is wound round an air-spaced former known technically as an Iron Core, and colloquially as an Iron Constitution. Wireless amateurs experimenting with Osses find that when the Oss is used in a rodeo circus the Iron Constitution is liable to develop a condition known as "Hysteria," leading to a more malignant malady, which causes Hysterical Osses. When power is applied through power lines to an Oss's Input Terminals, the Iron Core sets up Mutual Conduction. Thus when Mutual Conduction is in evidence the Master Driver or Detector conducts the Oss, and the latter conducts the rest of the equipment. The object of the Detector is, of course, to detect any lag in the rodeo circus. Care, however, should always be taken when connecting up an Oss, and more so when more than one Oss is connected in parallel. In the hands of an inexperienced amateur the result might well be chaos, with the result that the two Osses, instead of being mutually conducted, are found to be Phase to Phase with each other. Experimentally it is found that no matter how much Input is offered, a loss will always occur, and this Decrement is best measured by the rate of vibration of the Oss's diaphragm. It is easy to produce an Hysterical Oss by smartly removing the source of supply from the Oss's input terminals before the Oss is completely saturated. This method has never been known—

Tchearman (awakening): Somebody move a vote of thanks to Mr. Syndic for his able lecture—thank you—any seconder?—thank you—all in favour—carried by acclamation.

Curtain. End of Second Howl.

### HOWL THE THIRD.

Time: Later Still.

(The Wulwhin Raydeo Klub is engaged in debating whether it will alter 4QG's wavelength.)

Enter Dhog furtively. Gazes earnestly at Zek Tre's face, and goes out again. Later on reappears, and sidles along wall towards the Klub transmitter. Assuages his raging thirst at the Chemical Rectifier, and empties nine out of the sixteen jars. Starts on the tenth when Tchearman, to prove a point under discussion, turns the power switch. Dhog's oscillator makes contact with the transmitting transformer.

This provides the Third Howl:—

Curtain.

### ERUPTION.

(The curtain rises for a minute to show the members of the Wulwhin Raydeo Klub erupting from the neighbourhood of a stung Dhog each seeking to QSY to a more remote QRA.)

# A Good Two-Valve Short Wave Receiver

By "AUDIO TWINS" (4WN).

The set about to be described is intended for receiving on wavelengths from 20 to 90 metres, where amateur transmitters all over the world may be heard communicating by means of the international Morse code, also stations are occasionally heard transmitting speech or music.

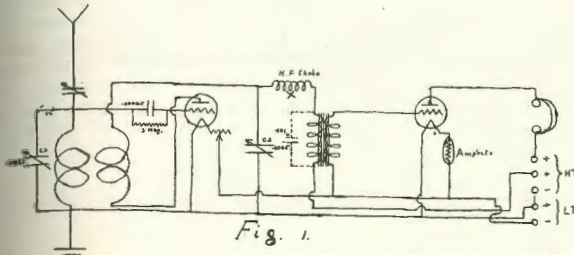


Fig. 1.

Fig. 1 is the circuit used and is known as the Schnell circuit. It is very much the same as the ordinary two coil circuit except for the small aerial series condenser C1, the variable condenser C3, which has a capacity of .0005 microfarad and the high frequency choke coil which should consist of about 75 turns of 22 or 24 D.C.C. S.W.G. wire wound on a former with a diameter of about 1½ inches.

In the case of the writer's receiver a small honeycomb coil 1½ inches in diameter and about ½ an inch wide, consisting of about 40 turns of wire served the purpose very well. The condenser C2 is a "Gilfillan" low loss type, with a capacity of .00025 microfarad, fitted with a Vernier action dial. The coupling between the aerial and reaction coils is tight and fixed, reaction being controlled by the condenser C3. The grid condenser has a capacity of .00025 microfarad, the grid leak being 2 megohms. The filament of the detector valve is controlled by a 6 ohm rheostat, the amplifier filament being controlled by an "Amperite."

The condenser C1 in fig. 1 consists of two brass plates, each about the size of a penny separated by about a sixteenth to an eighteenth of an inch. It was thought that it would be more advantageous if this condenser was made so that the distance between the plates could be varied at will. This proved to be so. At times when the set would not oscillate a slight adjustment to this condenser set it in oscillation.

The method of constructing and mounting this condenser so that its capacity could be varied is shown in fig. 2, which is a rear view of one end of the receiver. The small panel "a" is a piece of bakelite 3 inches long by ¾ of an inch wide by 3-16 of an inch thick with an 1-8 inch hole drilled 3-8 of an inch from each end, and a 3-16 inch hole in the centre. This is held in an upright position by the small bracket "b," which is a piece of brass bent into the required shape. "A" and "E" are the aerial and earth terminals of the set respectively. The strip of brass "C" is ½ an inch wide, one end of which is secured under the aerial terminal and to the other end is soldered the nut "D," this nut serving as an electrical connection, also as a bearing for the threaded rod "E," which passes through it. The nut "F" is a lock nut, used to keep the moving plate "H" rigid. Should this plate be loosely secured it will cause unsteady signals in the phones. A piece of 3-16 inch threaded brass rod "E," is about 2 inches long, one end of which is soldered to the centre of the plate "H." The rod is then screwed into place through the two nuts "D" and "F," and a small bakelite knob is fitted to its free end. When cutting out the fixed plate "I" leave a small tag about ¾ of an inch long by ¼ of an inch wide protruding from its edge. Near the outside end of this tag drill an 1-8 inch hole, then bend the tag at right angles to the plate. This tag will be fastened under the point marked "K" on the aerial tuning condenser.

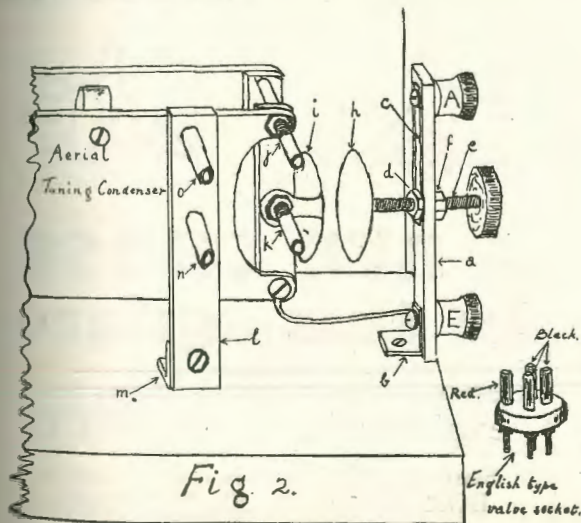


Fig. 2.

The two points marked "J" and "K" are the legs or sockets out of a low loss type of English valve socket shown in fig. 2. It will be found that by undoing the nuts at the bottom of these legs they will come out of the round ebonite block on which they are mounted quite easily. The two screws that were originally in the aerial tuning condenser at the points "J" and "K" are taken out, and the legs of the English valve socket screwed in their place. Before screwing them in, screw a nut on the end of each of them. These nuts, when the legs are screwed into place are in turn screwed up tight against the condenser. Thus it will be seen that they take the place of the heads of the original screws. Now these two legs serve as a holder for the aerial coil, which is of the Lorenz type as shown in fig. 3. To each end of the wire of the coil is soldered a leg taken from the base of a burnt out English valve. A piece of bakelite "L" 3 inches long by ½ an inch wide by 3-16 of an inch thick is supported by the bracket "M," which is similar to the bracket "B."



The two points "N" and "O" are the remaining two legs out of the English valve socket. The correct position for these two legs on the piece of bakelite is found by placing it on the baseboard alongside the legs "J" and "K"; then mark it for drilling so that the legs "N" and "O" will be in line with the legs "J" and "K." This piece of bakelite when the legs are fastened to it should be placed  $\frac{3}{4}$  of an inch to the left of the legs "J" and "K," and  $\frac{1}{2}$  an inch behind the aerial tuning condenser. The placing of this piece of bakelite will be better seen in fig. 3. You will find that you have to cut about  $\frac{1}{4}$  of an inch off the threaded end of the valve legs so that they will not touch the end plate of the aerial tuning condenser.

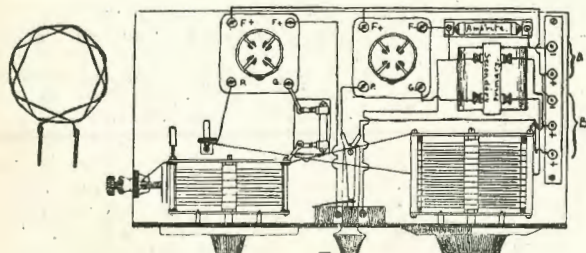


Fig. 3.

Figure 3 is a design of the layout of the component parts, also the wiring is shown. At the left hand end of the diagram, just behind the panel, is the small aerial series condenser, to the right of which is the aerial tuning condenser. On the back of the latter are mounted the two valve socket legs for holding the aerial coil. Just behind this condenser is the strip of bakelite with the two valve legs for holding the reaction coil in place, the top leg being connected to the terminal marked "P" on the first valve socket. The bottom leg is connected to the fixed plates of the variable condenser at the right hand end of the panel. The fixed plates of this condenser are also connected to one end of the primary of the audio transformer, which is immediately behind this condenser. This transformer has a ratio of 5 to 1.

Behind this transformer is placed the amperite, which controls the filament current of the amplifier valve. In the centre of the panel is the rheostat controlling the filament current of the detector valve, immediately under which is the phone jack. Just to the left of the inside end of this jack is the grid condenser and leak, one end of which is connected to the fixed plates of the aerial tuning condenser, the other end being connected to the terminal marked "G" on the first valve socket.

The high frequency choke coil referred to in fig. 1 is not shown in fig. 3. In the case of the writer's receiver, the choke coil being in the form of a small honeycomb coil it was placed on top of the audio frequency transformer, one end of the coil being connected to the fixed plates of the condenser just in front of this transformer. The other end of the coil was connected to one end of the primary of the audio frequency transformer.

At the right hand end of the set, a piece of bakelite, 5 inches long by  $\frac{1}{2}$  an inch wide is shown, upon which are mounted the battery terminals of the set. The two terminals marked "A" are the low tension

terminals, the three marked "B" being the high tension terminals.

In fig. 3 is also shown the type of coils used. They are wound of 14 or 16 gauge D.C.C. wire, so that they will be self supporting. The wire is wound on 8 pegs  $\frac{1}{4}$  of an inch in diameter, placed on a circle  $2\frac{3}{4}$  inches in diameter.

The following is a suggested combination of coils for the various wavelengths. From below 20 metres up to 35 metres:—aerial 2 turns, reaction 7 or 8 turns. From 35 to 50 metres; aerial 3 turns, 35 reaction 8 turns, Now 50 to 70 metres: aerial 5 turns, reaction 8 turns. From 70 to 90 metres aerial 7 turns, reaction 8 turns. In this receiver it will be found that the best type of valve to use for a detector is one of the special "soft" type of detector valves, which can generally be obtained from the various radio stores. Also it is advised that the socket used for the detector valve be of the porcelain type.

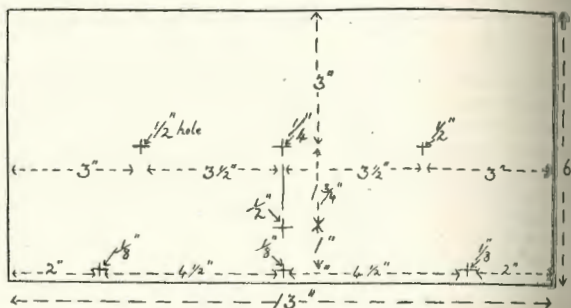


Fig. 4.

Figure 4 shows size of panel and measurements for drilling holes for mounting the various parts. The baseboard used in this set should be  $12\frac{1}{2}$  inches long by 6 inches wide by  $\frac{1}{8}$  of an inch thick. The operation of this receiver will be found very simple, the tuning being done by the first condenser and the point of oscillation being controlled by the second condenser.



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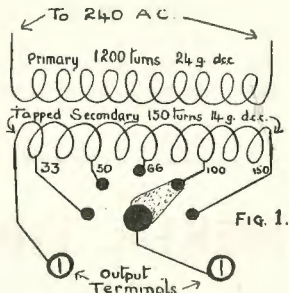
# A Home Made Step Down Transformer

By "EARTH" (4WN).

At some time or other every amateur and experimenter has found a need for a suitable and economical supply of lower voltage power for operating small electrical models, etc., which could not economically be run from batteries.

This article contains the full constructional details of a transformer which can be easily built by anyone possessing a few simple tools and for which an endless number of uses may be found.

The outstanding feature of this transformer is that the primary winding is merely connected to any 240v. A.C. light socket, and immediately a choice of 4, 6, 8, 12 or 24 volts is available from the secondary winding. The transformer may be very satisfactorily used for running model electric locomotives, bells, buzzers, and even for lighting a considerable number of miniature decoration lights as it is capable of a large output current which automatically varies to suit the load.



The primary winding consists of 1,200 turns of 24 g.a.d.c.c. wire and the secondary 150 turns of 16 g.a.d.c.c. wire. The secondary is tapped at 33, 50, 66 and 100 turns, by means of which the variable output voltage is obtained. Theappings are connected to the usual form of tapping studs and switch arm, which will give a choice of the voltages available. The windings andappings are shown in Fig. 1.

To wind the coils it will be necessary to construct a simple bobbin which is described as follows:

Take a block of wood measuring 2x2x2 and with a chisel, taper it towards one end until the smaller end is about 1 7/8 inch square. This is done to facilitate removal of the coils after winding.

Nail on the ends 2 pieces of 3/4 inch pine measuring 5in. x 5in. and in the corner of one of these put in a light nail to act as a handle for turning. Then drill a hole right through the axis of the whole bobbin and put a large nail through to act as a spindle.

The coils are removed by taking off the end piece on the smaller end of the block.

As the coils are being wound each layer of the wire should be coated with shellac. After the re-

quisite number of turns have been wound the coils should be removed from the former and taped evenly with Empire cloth or ordinary Indian cotton sewing tape, which is afterwards impregnated with shellac.

It is a good idea to lay two or three short pieces of wire across the bobbin at the beginning of the winding, bending the ends at right angles up the side of the bobbin, so that when the winding is completed the ends of these spare pieces may be joined together thus holding the windings and preventing them coming apart during removal from the bobbin. These temporary pieces of wire should be removed as the coils are being taped.

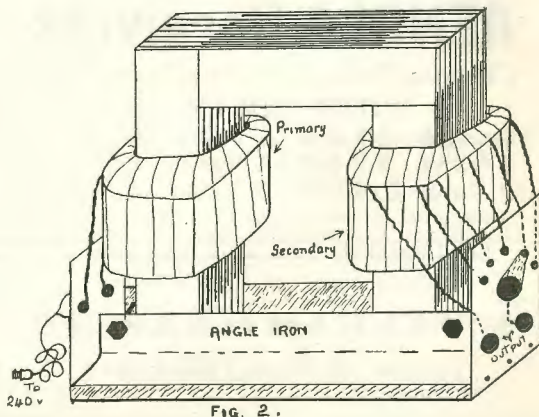
The transformer core is made up of laminations 4 1/2 in. long by 1 1/2 in. wide. The laminations may be cut from transformer iron, black stove pipe iron or ordinary benzine tins. Before being assembled the laminations should be individually varnished all over with shellac and allowed to dry. This is done in order to prevent eddy losses in the core.

Each limb of the core is assembled by laying the 4 1/2 in. strips of iron on each other overlapping 1 1/2 inches at alternate ends so as to make a limb 6 inches by 1 1/2 in. square.

When using 24 ga. stove pipe iron it requires approximately 120 laminations per limb but with benzine tin iron it requires considerably more as the material is thinner.

This group of laminations should be securely taped to prevent them coming apart. A small clamp will be found very useful in this operation to hold the strips of metal tightly together.

It will be necessary to construct four such units of laminations, which when completed should be fitted together to form a square closed core 6in. x 6in. outside and 3in. x 3in. inside. But don't forget to put the coils on before you completely assemble the core.



A baseboard 10in. x 7in. by 1in. thick will be required. The core is secured by means of two pieces of 1in. angle iron 7in. long by 1-8in. thick, which clamp the bottom limb of the core by means of two small bolts through holes in the extreme ends of the angle iron. This leaves a good flange to be screwed down to the baseboard.

The transformer is mounted in the middle of the baseboard and on the end of the baseboard nearest the primary winding there is mounted a piece of bakelite holding two terminals, which are connected one to each end of the primary. A piece of flex and a lamp plug will be required to plug in the supply from the mains.

On the end nearest the secondary is mounted a piece of bakelite large enough to carry a five point tapping stud switch and two terminals.

The inside end of the secondary winding is connected direct to one of the terminals and each of the tappings are connected to the studs of the switch in order of voltage. The arm of the tapping switch is then connected to the remaining output terminal, completing the construction of a most efficient step down transformer.

## On 4WN'S

By "PRESCORRES" (4WN).

That well-meaning fan, by name Feenaghty,  
Set wireless up as his Deevenaghty;

When he got on the air  
All the B.C.L.'s there

Soon left his immediate Veecceenaghty.



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Our President's wife once said, "Hubert,  
Who snaffled my bread-board? Did you, Bert?  
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The base for that set?  
It looks so suspiciously new, Bert!"

Mr. 4KY Coffey, stand by, sir!  
VIB's Chief! and OUR Adviser!!  
At Ongar, of course,  
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# Personalities



Mr. Thrumm, of that very active N.S.W. Radio Club—Croydon—recently paid a visit to Brisbane. Whilst in the city he paid a call to many of the local "4's," making and renewing friendships. He states that most of the Croydon Radio Club members are DX fiends—and many of them hold their ticket.

Frank Stevens has just returned to the city after a lonely six months' sojourn on Willis Island Radio Station. Frank says: "A hermit's life has its attractions—but, oh, boy! give me the city."

Bert Buck (4CW) was in to see us the other day, and he told us that he is undertaking another country trip in his car. This time he is taking a transmitter as well as a receiver with him; so watch out for him, fellows.

A couple of months ago a par in this column was effective in overcoming a loud-speaker nuisance in a certain suburb of Brisbane. We have been asked to request Mr. Spinks, of Gaythorne, out Enoggera way, to shove a pillow in his loud speaker, and thus give his surrounding neighbours a little peace.

Some people put volume before tone quality when judging the merits and demerits of a set. A discriminating amateur always gives first consideration to the tonal purity of his receiver.

Mr. F. W. Stevens, Chief Engineer at 4QG, is graying that the westerlies will subside ere Show week comes along. "Why?" you may ask. Well, it wouldn't be exactly pleasant to climb to the top of one of 4QG's lofty aerials in the teeth of a piercing westerly gale to describe "Brisbane by Night—with particular reference to the Royal Show display"—would it? We understand that Mr. Stevens is to take a microphone aloft and, sitting on top of the world, he will describe all he sees. Tests have already been carried out, and have, we believe, proved most successful.

Dr. Wilton Love—a well-known medico of Wickham terrace—has been infected with the dread Ra-choitis, and, according to reports, there is little hope for his recovery. It is said that the doctor caught the germ—or did the germ catch him?—whilst visiting his young nephew, who is, by the way, a notorious 4WN-ite.

Ted Hamilton, of Hamilton and Pass, is designing a high voltage generator that will, if successful, commend itself to DX fiends. Ted claims it can be run from any 10 h.p. engine.

Mr. Andrew Couper (4BW), of Mareeba, recently paid a visit to Brisbane, and we were pleased to make his acquaintance. 4BW transmits fairly regularly on 35 metres. His note is pure D.C., for his supply is taken from 240 wet batteries. Some power house, Andrew!

We imagine our friend Mr. Armstrong (Queensland Radio Inspector) enjoyed a quiet chuckle within when the recent bunch of amateurs sat for their transmitting license a few Saturdays ago. It is more than likely the 'Spec. recognised a few of the "fists" in the Morse tests, as dangerously like unto the "Joeys" who have made a sudden and mysterious disappearance off the air.

Our good friend Mr. A. E. Dillon is back again in Brisie after a six months' stay in the Wild and Woolly West. We believe he has entered the electrical trade again.

Arrangements are being made to broadcast the ring events at the Royal National Show. The announcer and microphone will be stationed near the ring.

On the evening of September 17th, Station 4QG are to broadcast dance music from 8 p.m. until midnight, making the first State-wide radio dances possible. The Wynnum and Manly Radio Club approached the director of the station re the matter some time ago, resulting in September 17 being fixed as the date. Several other Radio Clubs and Societies are now making the necessary arrangements for the holding of a radio dance on that date. It is understood that the entire function will be O.C.'d from the studio of 4QG.

Mr. F. Besley, a well-known printer of Brisbane, finds endless diversity from business worries by listening-in to stations far and near during leisure hours. He is now wondering how he ever got along without his radio set.

The Railway Commissioner, Mr. Davidson, is another well-known personality who now tunes-in to the broadcast programmes. 'Tis said that he enjoys "Uncle Ben's" bedtime story sessions just as much as the rest of us.

Mr. H. Coffey, O.I.C. at Pinkenba Radio Station, is kept busy these days installing the new Fordite generating plant at V.I.B. The installation is being carried out by A.W.A.

Congratulations to Mr. H. Stephenson, who we believe recently passed his Ham Ticket Exam. Doubtless 4WN will be on the air again soon, for Harold will be able to fill the op.'s chair during the enforced absence of the club's official operator, Mr. A. T. Buck.

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*Read This Letter from the President of the All Clubs' Council*

March, 8th, 1926.

A. McLeod, Bookseller,  
Elizabeth Street,  
Brisbane.

Dear Sir,

It has been my pleasure to peruse the advance proof of "Wireless," by Messrs. J. W. Robinson and G. Williams.

Wireless experimenters and club members will welcome this book, as it deals with technical subjects in a simple manner, which can be quickly understood.

I would also recommend it to the broadcast listener who seeks information on the transmission and reception of programmes, or the control of his set.

The book is profusely illustrated with circuit diagrams and photographs, and is written for Australian conditions, by two well known Australian radio experts.

In fact, here is a book which every prospective buyer, or owner, of a radio set should possess.

I congratulate the authors, and feel sure their efforts will be appreciated by all wireless enthusiasts.

Yours for radio,

**HUBERT KINGTON,**

President, Woolloowin Radio Club.  
Chairman, All Clubs' Council.

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# With the Hams

A slight improvement in amateur activities has been noted of late. There are about half a dozen "hams" practically always on the job nightly, so prospects are beginning to brighten up a trifle. 4CG is a new arrival and has been doing some fine work, using a 201A with 600 volts A. C. on its plate (!!), although I believe a five watt is in use now. He works on 36 and 85 metres and seems to have no difficulty in raising other states and New Zealand.

strength locally is not quite so good as it was when he first hit the air. This is recognised as nearly always a good quality so don't worry OM!

4AN has evidently been putting in some good work on his transmitter as on more than one occasion lately I have heard at least a dozen Yanks answering one of his CQS. The old T250 seems to be doing her stuff well!

A historical assemblage of local hams sat pretty at one of our photographers some few days back. A Marconi 1k.w. bottle with a one-piece filament was the principal feature in the picture. A burnt out 201A would have certainly made the gang look more at home, but nobody seemed to have wanted that effect—hence how come those heavenly expressions! Nett results in this issue.

Seeing that such a fine percentage of hams can be drawn together in so short a notice why not try



## A FEW OF THE LOCAL "FOURS."

BACK ROW (from left to right): C. H. Gold (4CG), A. T. Buck (4CW and 4WN), T. Elliott (4CM), G. Oxlade (4GO), F. V. Sharpe (4AZ).

FRONT ROW (from left to right): R. J. Browne (4RB), A. Couper (4BW), A. T. Bartlett (Editor "Q.R.N"), M. M. O'Brien (4MM), H. D. Walsh (4HW).

Recently a circular letter was forwarded by this journal to about 16 local "hams" (dead or alive) inviting them to attend the photographer's studio one lunch hour with a view to placing their profiles on record in this journal.

As the photo. shows, not a bad gathering resulted. Apologies were received from 4KY and 4DC.

4BW of Mareeba says he is down on 35, but reports nothing much doing, although DX B.C.L.'s report his sigs—good punch. He is using batteries for H.T. supply so keep an ear open for a good DC note!

4MM has been running up a good DX total. His 35 metre signals seem to be getting out well, but

We were particularly desirous to secure representation from 4AN, but no amount of persuasion could coax this evasive young man to pass over his photo for inclusion as an inset. Why, we cannot say, but we know that many of our readers, too, will be disappointed.

to get together a Fourth District Convention, a real "ham-fest?" There would be plenty to talk about and it should be something worth while for country hams to make a special effort to attend. Let's have suggestions!

The New Zealanders hold their weekly "prayer meeting" every Wednesday night on the 80 metre



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Equally important to the Radio Displays will be those of the Electrical Houses. They will hold demonstra-

tions to prove to you the wonderful advantages, cleanliness, and economy of electricity in the home.

## NIGHTLY BROADCASTING DEMONSTRATIONS

Station 4QG is outfitting a most complete studio at the Exhibition Hall from whence the nightly programmes for

the week will be relayed. Come and see as well as hear the artists' broadcast.

## Meet Uncle Ben, Uncle Jim and Mabel Sunshine

On Saturday, August 14, at 6.30 p.m., the Bedtime Story Sescion will be relayed from the Exhibition Hall. Bring

the kiddies in to meet the Uncles and Mabel. They'll have the time of their lives.

*The Show will be Open Daily from 10 .am. until 10 p.m.*

**Admission Adults 1/-**

**Children 6d.**

waveband. Celebrities such as 2XA, 1AO, etc., all tune their transmitters up there to join in the "old-time" chats, reminiscent of the days before DX was invented. They will not mind a few Aussies joining in; in any case there are generally a lot of "A's" around that wavelength so there is no reason why we should not fall in line and start something similar.

For those hams about to make their debut on short waves I should suggest they make their first stop around 85 metres as this is, by far, the most efficient wave for covering intermediate distances between one and 4,000 miles. 35 metres is, of course, the ideal QRH for longer distances, but it will be found in most cases where comparatively low power is used to be very unreliable for interstate working.

Quite a few Southerners are using the new UX210 (7.5 watt) tubes and according to reports I've heard, these tubes are wonderful little "perkers." The normal input is rated at something near 25 watts with a plate potential of 400 volts, although the majority of Yanks using them, cram (as Yanks only can), 100 to 150 watts on to their plates!! They thus seem to have the "nine lives" characteristic of the 201A, of which they are glorifications.

Some good Sigs have been pushing up from the Southern States during the last month. 2TY is a new one with a good punch and a nice D.C. note, his work seems to be confined chiefly to 80 metres. 2JA on 34 metres has rather a wobbly A.C. note and is not generally too strong. 2JP shows a good steady D.C. signal that is easy to read. 2RB comes through with a good wallop behind a pure D.C. note but his wave is inclined to swing slightly, spoiling what would be otherwise some perfect signals. 3BQ has a very clear note and steady signals of fair strength. He seems to be using battery H.T. supply. 5BG has been putting out some of the finest signals I have ever listened to. His note is remarkably musical with a solid bell-like ring throughout. The wave is very steady and suggests crystal control.

A fair crowd of New Zealanders are often heard on the air during the early evenings working Yanks and Europeans, but very few are heard after 5.30 p.m. Z-2AC is the most consistent bird I've heard; a night would not be perfect without hearing a few chirps from him. He is an A.R.R.L. Official wavelength station and signs off every transmission with his wavelength (accurate to 2 per cent).

Miss Z-4AA is now keeping the home "toobs" burning while Bro. Frank is holidaying on the other side of the globe. She can wangle a wicked key and copy Morse like the best of 'em. Another New Zealand young lady ham is the second op. at 4AV, Miss Milnes. She is occasionally heard on the key a few nights a week. The OIC has always to take any "dog watches" though!

Many of us have probably received one of those circulars issued by the P.M.G.'s department inquiring proof of genuine experimental or research work conducted during the currency of our licences. Let's hope they won't be too tough on us!

One or two new Japs are heard on the air lately. None of the "J's" seem too strong or steady lately.

J-ITS of Tokio says that up to the present no amateur transmitting licences have been issued in Japan. Despite this fact there are, altogether, about 20 unlicensed stations in operation. J's, 1AA and 1PP are Government stations, so never send any report to Japanese hams through them if you want your QSL to reach its destination. Although no trouble has arisen at present, it might always develop, so anyone QSLing may help our Jap brethren by sending all cards under cover of an envelope.

Dutch amateurs are being heavily penalised for using unlicensed outfits. All the unofficial "N" calls begin with the cipher 0 (nought). Those beginning with P are, however, quite legal. The Dutch authorities state that transmitting licences are granted to public institutions, schools, etc., but not to private individuals.

### WIRELESS INSTITUTE MORSE PRACTICE TRANSMISSIONS

The Queensland Division of the Wireless Institute of Australia intend opening up their station, 4WI at about the middle of this month. Experimental transmissions comprising of standard frequencies (wavelengths) and slow Morse practice are to be broadcast.

These transmissions will take place every Tuesday night at the usual time. The normal wavelength, although not yet definitely decided upon, will be in the proximity of 240 metres.

For the benefit of the uninitiated the Morse alphabet and numerals are shown below. These can be quite simply mastered by learning a few letters at a time. Sending may be practiced with a key and buzzer set, but receiving can be learned only by listening to other sending. It is for the latter purpose that the slow Morse transmissions from 4WI have been inaugurated.

#### THE MORSE CODE.

|        |         |   |         |
|--------|---------|---|---------|
| a      | — — — — | s | — — — — |
| ä      | — — — — | t | — — — — |
| á or â | — — — — | u | — — — — |
| b      | — — — — | ü | — — — — |
| c      | — — — — | v | — — — — |
| ch     | — — — — | w | — — — — |
| d      | — — — — | x | — — — — |
| e      | — — — — | y | — — — — |
| é      | — — — — | z | — — — — |
| f      | — — — — |   |         |
| g      | — — — — |   |         |
| h      | — — — — |   |         |
| i      | — — — — |   |         |
| j      | — — — — | 1 | — — — — |
| k      | — — — — | 2 | — — — — |
| l      | — — — — | 3 | — — — — |
| m      | — — — — | 4 | — — — — |
| n      | — — — — | 5 | — — — — |
| ñ      | — — — — | 6 | — — — — |
| o      | — — — — | 7 | — — — — |
| ö      | — — — — | 8 | — — — — |
| p      | — — — — | 9 | — — — — |
| q      | — — — — | 0 | — — — — |
| r      | — — — — |   |         |





## *Expect More of your Battery*

**T**HERE is a tendency to-day to take battery dependability for granted, and sometimes to select batteries on a basis of price alone. This is a high tribute to the inherent dependability of batteries generally, but is it a safe course to follow?

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**SYDNEY, N.S.W.**



Conducted by Uncle Ben, of Station 4QG, Brisbane.

Well, sweethearts, here we are again! Another month has slipped passed since we had our chat together through this corner. My! what a lot of things have happened since then! Sambo and Pete have visited Uncle Jim and myself at 4QG—and—aren't they funny? Sambo simply can't stop laughing once he starts, and, of course, when he laughs, everybody else has got to laugh, haven't they?

I will never forget the wonderful welcome Uncle Jim received at Central Station when he returned from Sydney. Such a big crowd of girls and boys came along to welcome him home again, but when the Sydney Mail was so late they all thought they were going to be disappointed. At the suggestion of one of the engineers we secured a great big bag of peanuts and asked Mabel Sunshine to pass them around to the children, and hundreds of little faces simply beamed with joy.

Suddenly somebody shouted "Here she comes—Here she comes—Here's the train," and sure enough, it was. Everybody got excited. Mabel dropped the peanuts, Sambo and Pete started to laugh. I nearly slipped on an orange peel. Oh, dear! it was funny. A little boy shouted out "I see Uncle Jim," and sure enough he was right. Uncle Jim came marching down the platform as pleased and as proud as the Prince of Wales. He was indeed a happy Uncle to know that such a big crowd of girls and boys turned out to greet him. Then the photographer took a flashlight photo. of us. Sambo got frightened when he saw the cameras—he thought they were guns. Then when the flash went up Sambo went up about six feet, and nearly turned white with fright.

We all shook hands with hundreds of little children. One little boy behind me said: "Mummy, I touched Uncle Ben's coat." When I turned around to speak to him he was so surprised that he lost his tongue!

Uncle Jim got such a surprise when he saw Tony looking so well and fat. He was so fat that he had quite a job to make the saddle fit him.

Now, sweethearts, I must close or else the editor will be telling me I am taking up too much space. Before I leave you I want to remind every one of you about visiting us at the Radio and Electrical Exhibition, which is to be held in the Exhibition Concert Hall on Saturday evening, August 14th, at 6.30 sharp.

Uncle Jim, Mabel and myself are all looking forward to this night—so bring your daddies and mummies—bring the whole family—we'll be pleased to make friends with you all.

Oh! I nearly forgot, to tell you that Sambo and Pete are coming, too—won't that be fine? Don't miss this night, whatever you do. Good-bye, little ones, until August 14th. (Write the date down.) Cheerio, sweethearts!!

Yours very fondly, UNCLE BEN.

### Uncle Ben's Competition Corner for the Kiddies



### Can You Make a Picture of This?

The above pieces, when assembled, represent two well-known personalities at 4QG Bedtime Story session. Can you place them together into a complete picture? Cut them out and try, pasting them on to another piece of paper or card. Send your attempt in to The Editor, "Queensland Radio News," Albert Street, Brisbane, marking the envelope "Uncle Ben's Competition."

#### PRIZES.

- First correct solution received . . . . . 5/-
- Second ditto. . . . . 2/6



### Can You Guess the Number of Uncle Ben's Car?

The above is a picture of Uncle Ben's car. You will notice that the number is missing. Try and guess what you think would be a lucky number, fill in the picture on or under the blank space provided, and send it to "Queensland Radio News," Albert Street, Brisbane, marking the envelope "Uncle Ben's Competition."

On the 24th August I will award the prizes to the number nearest the correct solution.

#### PRIZES.

- First Prize . . . . . 5/-
- Second Prize . . . . . 2/6

(Editor's Note.—The number is (Q4 - - - 1). Now, all you have to do is to fill in the three missing figures. I hope Uncle Ben won't be wild with me for telling you this.)



# Two Valve Set

Complete in every detail

## £12-7-6

We firmly believe this is the most amazing offer ever made to Wireless Enthusiasts.

We guarantee these Sets will give excellent Loud Speaker strength from 4QG and moderate Loud Speaker strength from 2BL, Sydney and 3LO Melbourne.

Every component in this Set is of a dependable quality, put together by an expert. Every set guaranteed free from Mechanical and Electrical defects.

### HERE ARE THE COMPONENTS USED IN THE MAKING.

- 2 D.E. Valves
- 60v. "B" Battery
- 3 Columbia 1.5 Cells
- 2 Mounted Coils
- 1 Pair Spitfire Phones
- 100 ft. Aerial Wire
- 4 Insulators
- Lead-in Tube
- Earth Clip
- 6 yards Earth Wire
- A.E. Switch
- Spitfire Loud Speaker.

Come along and allow us to give you More Details about this Set.

AN EARLY PURCHASE IS TO SAVE DISAPPOINTMENT.

# Overells' Ltd.

THE VALLEY :: BRISBANE.



AN HOUR WITH THE CHILDREN.

Our friends, Uncle Ben, the Sandman, Sambo, and Pete had a jolly time at Lawrence Stratford's party at Corinda on Saturday, July 24th. The Sandman took the photo.



WHEN UNCLE JIM CAME BACK.

From left to right: Sambo, Uncle Jim, The Sandman, Uncle Ben, Pete, the Professor, "Mabel Sunshine," and "Mr. Smith."

## The "Censored" Verses

"Uncle Ben" has asked us to insert the following verses which he has received from two little friends and which were censored at 4QG. It will be remembered that "Uncle Ben" whistled these verses last Saturday night:—

How do you do, 4QG! How do you do!  
 Now don't let all your critics worry you;  
 There are people on this earth  
 Who are miserable from birth,  
 How do you doodle, doodle, doodle, doodle, do?  
 —Dulcie Samuels, Taringa.

How do you do, Radio Inspector; here's work to do.  
 Those who criticise, they're the men for you,  
 Try and find out who one is,  
 At his license have a "quiz,"  
 And I think you'll do good biz. How do you do?  
 —Herbert Dowdell, Toowong.

## BY THE WAY

Some people are of the opinion that large factories are becoming the exclusive centres of production which cannot take into account individual tastes and wishes. They fear that the world evolves towards an absolute industrialisation.

If you share this opinion then you are not aware of the enormous progress which has been such wireless, for its swift development has been such that factories have been unable to cope with its strides. It is the amateurs, in which great class come also workmen, employees, and students who have turned their living-rooms into workshops and have built most of the receiving apparatus now used all over the world.

Sometimes you see an elaborate station or set possessed by some fortunate person who wants to have "the very best." Again you much more frequently see apparatus, perhaps a little primitive, but made by the amateur himself; giving its constructor as much entertainment and pleasure, and perhaps better results.

Only an electrical engineer himself can realise the enormous difficulties met with in the use of the earliest form of apparatus constructed from transoceanic wireless stations. It is he only, who can explain to the uninitiated how the great energy produced by the generators of a transmitting station is braked instantaneously by the various apparatus in circuit according to the rhythm of Morse-signals.

The layman may be able to realise the super-human effort that would be called for in order to stop instantaneously several hundred horses in full stampede, and to start them again from a standstill to an immediate full gallop. A problem of electro-mechanics is before us, juggling as it were with the stopping and starting of huge amounts of energy, instead of horses. This is only one of the problems, and some time when one pauses to think, it is a mere nothing as compared with some difficulties met with in sending out music and voice by wireless transmissions.

The vibrations of the human voice or of music are sometimes transmitted by an oscillatory circuit working with as much as 50 kilowatts of high frequency energy.

If we had to use interruptors, electro-mechanical relays, etc., we should be hopelessly at sea with the transmission of wireless telephony.

Happily, however, science has shown us that we can dispose of electrons (which for all practical purposes we can consider as having no mass or inertia), which travel at an inconceivable rate through space and vacuum and which we can control at will. It is to these that we owe the success of wireless telephony. The relay of electrons allows of a limitless amplification and it is due to this fact that the energy sent out by the aerial of a transmitting station can be more than 10,000,000 times greater than the energy of the human voice speaking at the microphone which causes the emission of electrons to take place.

**USL**  
STORAGE BATTERIES

## Complete Satisfaction at all Times with U.S.L. Wireless Batteries

### Radio Batteries

|        |          |         |
|--------|----------|---------|
| 6 Volt | 60 Amp.  | £3 18 0 |
| 6 Volt | 80 Amp.  | 4 19 0  |
| 6 Volt | 100 Amp. | 6 0 0   |
| 6 Volt | 120 Amp. | 7 10 0  |

Power to receive the distant stations clearly, and clearness for 4QG.

There's long life and dependable service in U.S.L. Batteries, too.

Bring your Battery troubles to U.S.L. and have them remedied at low cost.

**Butler Bros. [Aust.] Ltd.**

"Monarch House"

**CREEK STREET, BRISBANE**

*For those who build their  
own Sets—*

## ROBERTS' EXHIBITION WIRELESS CABINETS

*As supplied to leading Australasian Dealers*

Scientifically constructed to give the best results, beautifully finished. Made to any size in Maple, Silky Oak, or Rosewood, in Table Models or De Luxe Period Designs.

We also design Cabinets to harmonise with any Furnishing scheme.

*To Those in the Country*  
To facilitate packing we supply  
"knock-down" Cabinets, cut and  
polished, ready to screw together.

Full particulars gladly supplied on receipt of your requirements.  
Complete Sets supplied if required.

HENRY ROBERTS  
BRUNSWICK  
HOME FURNISHERS  
BRUNSWICK ST. - OPP. JACKSON'S BOND  
STORES NEAR EXHIBITION VALLEY - BRISBANE

# Club Activities



NOTE.—Reports must reach this office by the 20th of the month.

## The Wireless Institute of Australia Queensland 'Division'

At the annual meeting of the Wireless Institute the following officers were elected for 1926:

Patron: A. G. Jackson A.M.I.E.E., A.M.I.E. (Aust.)

Vice-Patrons: Prof. T Parnell, M.A., Dr. Boyd, J. Christie.

Past President: A. K. Lawton.

President: W. Monkhouse, A.M.I.E.E., A.M.I.E. (Aust.)

Vice-Presidents: C. H. Caspersen, Chas. Dunn, E. M. Gibson, A. A. Jackson, J. C. Price, S. H. Smith, A. N. Stephens.

Hon. Members: S. V. Colville, C. W. Isles, J. Sutton, F. Walker, The Commonwealth Radio Inspector for Qld., The Manager of State Radio Station.

Council: R. J. Browne, R. W. Burt, F. E. Foulis, F. V. Sharpe, H. J. Stephenson, C. W. Stephenson, J. Williams.

Hon Secretary: O. R. Chas. Runge.

Hon. Treasurer: T. H. Dutton.

Hon. Auditor: A. Hope-Jones.

After the usual vote of thanks to the retiring officers the President outlined the proposed activities for the coming year. It was considered that as every member had his own set more use should be made of it. With this aim in view it was proposed to overhaul the transmission set and put it into commission again. These transmissions will take the form of a series of calibration tests if possible over a number of wavelengths. In this way members will be able to test out and calibrate their sets, try out new circuits, etc. Again it is proposed at certain times to broadcast the business of the Institute, making use of suitable relay stations for distance. A series of transmissions of slow Morse will also be undertaken enabling members to learn receiving from their own sets.

## The South Brisbane Radio Club

The past month has been one of activity for the club, and as a result, the club room is now complete. Much praise is due to Messrs. Tweddell and Young for the manner in which this work was done.

A great part of member's time is spent with the **Omni Receiver** on which various circuits may be

tried out. The valuable information gained from this becomes apparent when members are building their own sets and saves them from the radio fiend's habit of tearing their receiver to pieces to try out new circuits.

During the past month our Secretary resigned. He maintains that one's mind cannot be divided between dancing, etc., and radio, and reversing the time honoured dictum has left radio, in so far as club matters are concerned.

Vice-President Myers has not been with us for some considerable time now. What's wrong, Arthur? Surely at your age you haven't developed Mac's complaint.

Rumour has it that the Treasurer has lost his punch and subs are coming in very slowly, but I have it from the best authority that he is about to commence a general round-up, so members take this warning and begin to save.

All communications and enquiries re membership should be addressed Hon. Secretary, Care of H. Tweddell Amelia Street, Buranda.

## Graceville District Radio Club

Friday evening, the 2nd inst., saw another enthusiastic meeting of members of the above club in the Graceville Methodist Hall.

The club is now in the happy position of being able to make a start towards the erection of its own club room, permission having been obtained to erect this building on the property of one of the members.

Various discussions took place during the evening, including one on the ways and means of further increasing the club funds. Several good suggestions were put forward, but nothing final was arrived at.

A much appreciated and informative lecture was given by a member on valve amplification for crystal sets.

Possessors of radio sets residing in the district, who are not as yet members of this club, are again reminded of the considerable benefit that can be gained by joining up. Applications can be made to the Hon. Sec. Mr. S. Keeping, Ettie Street, Sherwood.

The next meeting will be held on Friday evening, August 6, when a hearty invitation is extended to any country enthusiasts visiting Brisbane for the Exhibition

## Cairns and District Radio Club

At a gathering of about 35 Cairns wireless enthusiasts at Mr. Fitzsimmons' garage on Monday night, a Cairns and District Radio Club was formed to promote the silence in the Cairns district. Mr. Les. Fitzsimmons was elected president of the club and Mr. Tarbart appointed honorary secretary.

The first business of the meeting, after the object had been outlined by Mr. Lucas was the election of a secretary, which was a difficult matter, since this was a position which generally made demands upon that officer's time and temper. Mr. Tarbit at length took the position. For the office of chairman Messrs.

R. C. Plomley, Hambleton, A. Lucas, and L. Fitzsimmons were nominated. Mr Fitzsimmons was elected by a fair majority Messrs. Lucas, Moynahan and Tatton were elected vice-presidents, and Mr. George Blessas treasurer.

It was decided that the meetings of the club be held on the first Wednesday in each month, in Mr. Fitzsimmons' garage, for the time being at least. A committee of six, including the officers, was appointed to investigate urgent matters, and give aid to any member who might be in difficulties with his set.

An annual subscription fee of 5/- was decided upon, with an entrance fee of 2/6; lady members to be exempt from the entrance fee. The years to start as from June 1.

When the official business had been completed Mr. Albert Lucas gave an interesting address upon the different stages and methods of wireless reception.

At the conclusion of the meeting applications for membership were invited, and 25 names were handed in.

**EASTERN SUBURBS RADIO CLUB.**

This young but active club has now a membership of 20 enthusiasts. An interesting syllabus for the coming year has been drawn up, which includes a lecture on three meeting nights, the fourth night being set aside as a social evening.

The morse instruction classes are given by Mr. Castles, and it looks as though we will be able to

listen-in to several of the amateur stations transmitting on low waves. Several of the club members are, at the time of writing, building low loss short-wave receivers for experimental work.

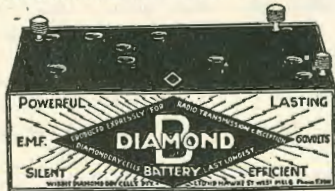
A Euchre Party and Dance has been arranged, and will be held in the Druids' Hall, George Street, city, on 31st July. Indications point to the function being a great success.

The Club meets every Wednesday night at Dr. Reye's residence, Stanley Street (near King Street), East Brisbane. Any enquiries by intending members will be gladly attended to by the Hon. Sec., Mr. A. E. Newnham, Logan Road, Woolloongabba. Phone J4379.

**Burndept Ethophone British Wireless Sets**

The Queensland Pastoral Supplies Ltd. announced in this issue the arrival of the ETHODYNE 7-VALVE SUPER-HETRODYNE RECEIVER. With the increase in the number of Broadcasting Stations, the fastidious listener desires the programme he chooses shall be entirely free from the disturbance caused by other stations transmitting perhaps on only a slightly different wavelength. This is perfectly accomplished on this new receiver.

The Ethodyne does not use external aerial or earth connections, a small frame aerial being all that is necessary to receive all Australian Stations loud speaker strength, also American high-power stations.



**DIAMOND DRY CELLS**

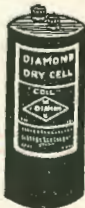
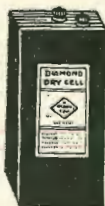


**"Diamond Batteries Make Good Sets Better"**

Diamond Radio Batteries are powerful, silent, and outlast any other make of Dry Cell. More than a million are manufactured in Australia annually. Every cell is guaranteed, and should a fault be found in any Diamond Dry Cell it will immediately be replaced. Remember a Radio Set is no better than its battery, therefore it is most essential to choose a battery that will give long and honest service. Such are Diamond Dry Cells.

**RETAIL PRICE LIST ASK YOUR DEALER FOR THEM**

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|----|-----------------------------|------|
| A- | Battery "Coil"              |      |
|    | 1.5 Vt. "Coil" ..           | 2/9  |
|    | 1.5 " " "Buzzer" hamp ..    | 3/-  |
| B  | 1.5 " " "C" wealth-type" .. | 5/9  |
|    | 1.5 " " "AVER" ..           | 5/6  |
|    | 60 Vt. Large Type ..        | 27/0 |
|    | 45 " " Large Type ..        | 22/6 |
| C- | 4.5 Vt. " Biason ..         | 13/6 |
|    | 4.5 " " Large Special ..    | 13/6 |
|    | 6.0 " " Ignite ..           | 16/6 |
|    |                             |      |



**SUPPLIED TO**

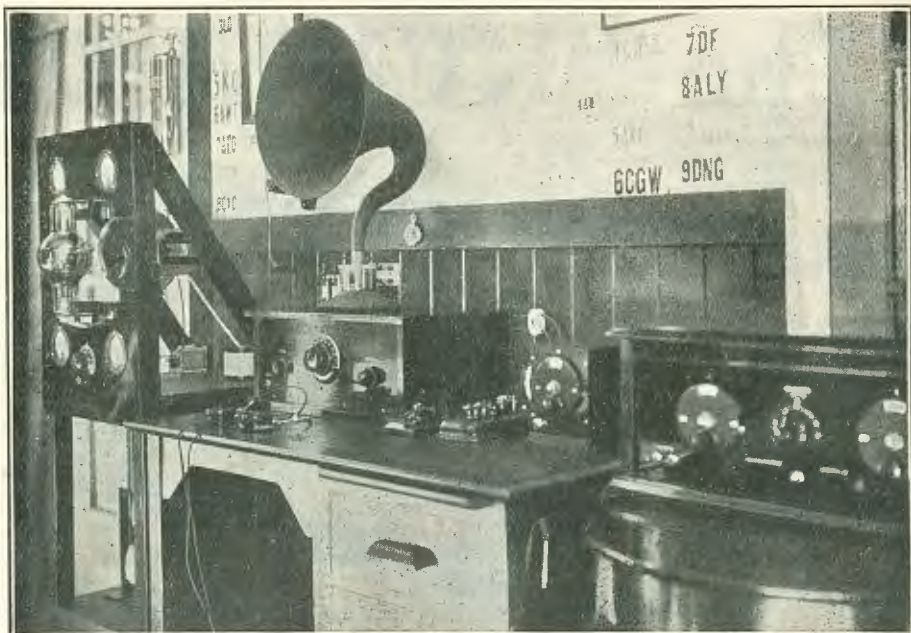
P.M.G. Dept., Water Board.  
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Wholesale only from:—  
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Manufactured by WIDDIS DIAMOND DRY CELL PTY. LTD. W. Melb., Vic.

# 4AN

Australia's  
Best-Known  
Amateur  
Station



Young Leighton Gibson (4AN), known and highly respected in DX circles in all corners of the globe, has been in the amateur transmitting game for just a little over six years.

In common with most experimental stations, 4AN is in a constant state of flux, but the photo reproduced on this page gives an accurate idea of the present layout.

The first illustration shows the main transmitter signals from which have been heard in five continents and seventeen countries of the world. A Marconi T250 tube is used in conjunction with the conventional loosely-coupled Hartley circuit. The power input at present is 160 watts, the power supply being obtained from the alternating current house service mains. The home-made transformer, which steps the voltage from 240 up to 3,000 volts, may be seen just below the transmitter. The output of this transformer is rectified by Amrad "S" tubes, after which it is filtered and applied direct to the plate of the tube at 1,100 volts' pressure.

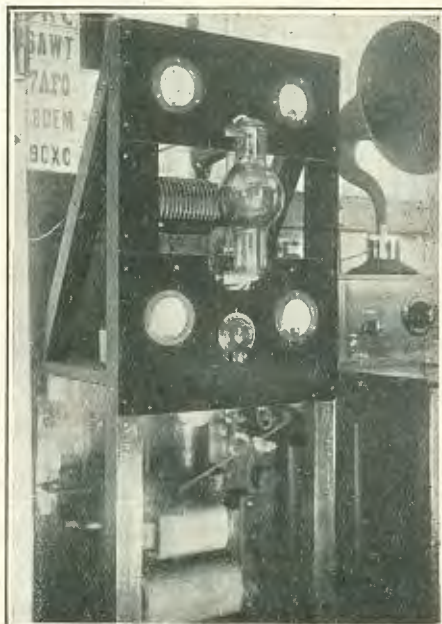
The two-tube short-wave receiver is located in the centre of the picture, and on its right are the transmitting key, "bug" key (a high-speed semi-automatic affair), Wavemeter, and on the extreme right a 5-valve broadcast receiver of special design employing resistance coupled amplification.

Other equipment not shown in the photographs includes a 100-watt transmitter operating experimentally on 4.73 metres, and a low-power transmitter using a dry cell valve and operating on a battery supply. Signals from this low-power set have been heard in Tasmania when the power input was only 1.92 watt, and in Sydney when it was .096 of a watt.

Three antennae are in use. For both broadcast and short-wave reception a 50ft. tapering cage 40ft. high is used, while for transmitting on 34.5 and 89 metres a heavy single wire 65ft. long suspended semi-vertically from a 45ft. mast is employed.

The antenna for 21 metre transmissions consists of a 15ft. vertical copper rod.

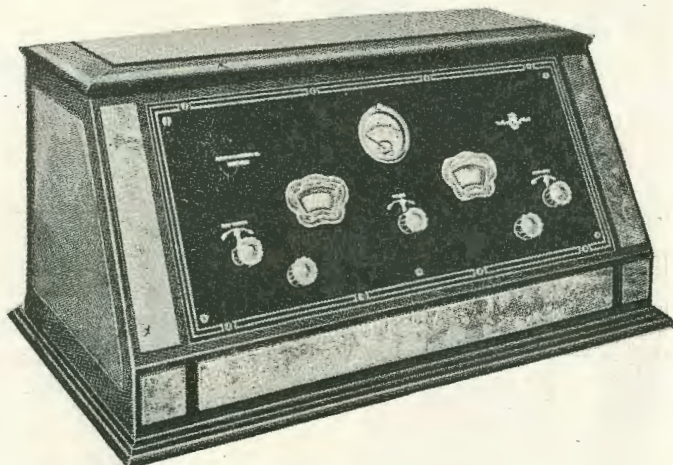
(OVER)





# The "KENNEDY 5"

The  
Royalty  
of  
Radio



The  
World's  
Most  
Beautiful  
and Efficient  
Receiver

**T**HIS Super American Set is presented in a two-toned Cabinet with burl-walnut panelling—a beautiful piece of Furniture and a wonderful Set, the efficiency of which is guaranteed. Price, with a Burns Pyralin Bell Loud Speaker and the Best Accessories from the Aerial to the Batteries. **75 GUINEAS.**

## THE "RICODYNE 5"

**THE RICODYNE 5.** A cheaper Set, neat, attractively built and wonderfully efficient. A tuned radio frequency receiver that is popular to-day. Complete with the Best Accessories. **£41.** This fine Set can be had on reasonable terms.

### Among other Lines We Have

|                                       |                                   |
|---------------------------------------|-----------------------------------|
| Crystal Sets, complete, from £1/10/-. | 2 Valve Sets, complete, from £10. |
| 1 Valve Sets, complete, from £7/10/-. | 3 Valve Sets, complete, from £14. |

A fine range of all known makes of Accessories and Valves, too numerous to mention.

Demonstrations daily at 1 p.m., and from 3.30 p.m. to 4.15 p.m. Evening demonstrations by appointment.

# WIRELESS SUPPLIES LTD.

14 Brisbane Arcade, Queen St., Brisbane

Phone 3785 Central

Mr. Gibson, senr. (father of Leighton), has contributed in no small measure to the success of 4AN. His copper-plate "fist" may often be heard on the air, and he, like Leighton, is keenly interested in the work of the station and in wireless matters generally.

Good DX work has been accomplished from 4AN using low wavelengths from such countries as England, Japan, Sweden, Italy, France, U.S.A., and a host of others. Fred Roebuck, of KFUH fame, has spoken of 4AN as the Australian short-wave station, and everybody in the Radio DX world knows what great significance may be attached to this statement by this world-renowned authority.

Well done, Leighton! Carry on, OM, and let the world see that whatever District 4 may lack in quantity is amply compensated by quality.

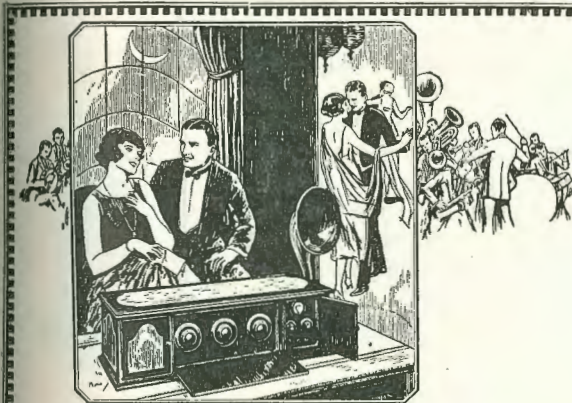
**THOMAS RADIO CO. REORGANISED.**

By advertisement in this issue it is announced that by mutual consent Messrs. Thomas and Knipe have dissolved partnership, the latter taking over the business, which will be carried on under the old name at the old address, Adelaide street, Brisbane. A reorganised method of service is now being carried out, and clients are assured of every assistance and promptitude in regard to their purchases and orders for Pacific Radiophones.

**"Limitless Man"**

What should we consider truly great invention? Truly great inventions are those which have created unsuspected possibilities, which have made real the most audacious dreams and predictions of our ancestors.

Among these inventions the most interesting are not those which have merely enabled us to utilise the forces of nature, but those which contribute to the extension of our faculties. Thus the bicycle allows us without any more effort to go three times as quickly as on foot. The telephone enables us to hear the human voice over distances which it could not penetrate of its own accord. The cinema shows us happenings which occurred days, months or years ago in parts of the world where perhaps we shall never go. The phonograph enables us to hear the voices of those passed away. Finally comes radio communication. It gives us contact with the whole world. We are privileged to learn without delay about everything which happens in the great world around us. For one who lives in a large town accustomed to the wonders of life, science and art, it is marvellous; but for one who is obliged to live in a little village or in the country it is more than that. It is freedom from enforced solitude and it is an intellectual regeneration. The hermit himself cannot now lose contact with the world.



- (1) Harringtons are a firm with an established reputation of 37 years.
- (2) We sell "Quality" Products.
- (3) We guarantee our Receivers for 12 months.
- (4) The finest Radio Service is at your disposal.
- (5) Our Easy Terms are most attractive.

Messrs. Harringtons Ltd.  
Queen St., Brisbane.  
Please send me Illustrated Folder of  
"Popular" Radio Sets.

Name .....

Address .....

*Radio Brightens Your Home*

From £5 Deposit

You can secure a

**Harrington 'POPULAR' Radio Set**

3 Valve £27/10 · 4 Valve £32 5 Valve £40

Complete with ALL Accessories including "Thorola" Loud Speaker, and carrying our genuine 12 months' guarantee.

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## Low Loss!

**W**HY buy expensive condensers and coils and then nullify their efficiency by mounting on an inferior high loss panel?

RADION is the foundation on which to build your set. It is made expressly for radio and far excels any other insulating material in the four essential characteristics of wireless, namely:

- 1—Low angle phase difference
- 2—Low dielectric constant
- 3—High resistivity
- 4—Low absorption of moisture

In addition, Radion is easily worked and is truly beautiful in appearance. In cost, it is more economical than any other material and will prove to be far more efficient in every way.

Always insist upon genuine Radion Panels and Parts (dials, sockets, knobs, insulators, etc.). Inferior material cannot possibly give you the same satisfactory results. The name Radion stamped on every piece is your assurance of complete satisfaction.

Factory Representative:

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**The Supreme Insulation**

# RADION

**PANELS ~ DIALS ~ SOCKETS ~ KNOBS**

382

Queensland Distributors—

HOME RADIO SERVICE LTD.

# Questions Answered

**F. J. F. Zillmere.**—The cigar box amplifier described in our last issue will receive all Australian wave lengths, and any probable re-allocation of same will not affect in any way the efficiency of the apparatus.

**J. O. H. (Rockhampton).**—Try reversing your speaker leads. This frequently increases volume and improves tone considerably.

**T.C.M. (Laidley).**—As far as we know no definite announcement has been made concerning the re-allocation of Australian broadcast wavelengths, although we understand that an official statement is shortly to be made.

**K.V. (Newmarket).**—Loud speaker reception from crystal receivers is not uncommon. An efficient aerial is, of course, the primary consideration to good crystal reception.

## Dissolution of Partnership

Notice is hereby given that the Partnership heretofore existing between Percy Charles Thomas and Gordon Imary Knipe has been Dissolved by mutual consent.

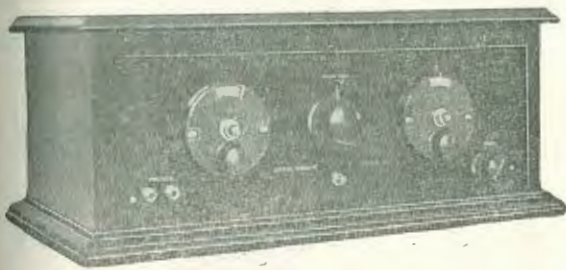
Gordon Imary Knipe will carry on business, under the name of the Thomas Radio Company, at the old address, Adelaide Chambers, Adelaide Street, and will receive all moneys and debts due to the late partnership, and will discharge all liabilities against the late partnership.

The  
**Thomas Radio Company**

Per Gordon Imary Knipe

Brisbane, 21st July, 1926

## Are you satisfied with your Receiver?



### Gibson Series 56 Broadcast Receiver "A True Musical Instrument"

Perfect Reproduction, due to Resistance-Coupled Amplification. No interference from 4QG outside one-mile radius. Demonstrations gladly arranged. **Price Complete £60**

*Many Cheaper—but None Better*

# LEIGHTON GIBSON

**P.O. Box 106B Brisbane  
Telephone J3167**



LET me inspect it, and give you a quotation for overhauling and modernising it. You will receive the benefit of over six years' Radio experience, at a moderate cost.

## I Specialise in

Short Wave Receivers  
Trouble shooting and Repair Work  
Low and Medium-power Transmitters  
Wave Meters and Wave Meter Calibration  
Dual Purpose Receivers—S.W. and Broadcast  
Built-to-order Receivers—submit requirements  
Wave Filters—eliminate interference from 4QG



Cootharaba Hill,  
Gympie,  
July 7, 1926.

The Editor,  
"The Queensland Radio News,"  
Brisbane, Qs'ld.  
Dear Sir,

I read with interest the letter from Mr. Takee Kimi-zuka of Kazusa of Japan, in which he asks whether we in Queensland can receive Japanese broadcasting.

I have received two Japanese stations which are approximately on 3LO's wavelength, one just above and the other a little higher almost on 4QG's wavelength. They come in at times quite plainly and remarkably clear. In fact, I can get them or at least one of them on almost any night. The set in use is a two valver (Det. and IAF), the aerial being only 15ft. higher than the set. Once or twice I could work two pairs of phones readily on one of the stations

I have also received one of these stations on one valve with a 25ft. aerial.

I am, sir,  
Yours Etc.,  
M. Crawford.

Clayfield,  
9th July, 1926.

The Editor, "The Queensland Radio News."

Dear Sir.—Judging from an article appearing in your current issue, I am afraid you have a wrong impression of the attitude of the large majority of Church of England people towards wireless broadcasting of church services.

As a member of Synod, and seconder of Mr. Shand's motion pro forma, I have a good opportunity of judging the mind of the Synodsmen on the matter, especially by personal conversation with many of them, and I venture to say not 10 per cent. of English Churchmen would endorse the attitude either of Archbishop Sharp or of Rev. Shand. More particularly, I, in common with very many others, resent Mr. Shand's remarks when moving his motion.

I enclose a copy of one "Parish Notes," in which you may see how I summed up the views of Synod on the broadcasting of church services. You will, no doubt, readily understand the reluctance to have broadcasted such a service as that of Holy Communion.

With every good wish towards wireless,

Yours sincerely,

J. W| WOOD (Major)  
(A Listener-in).

We are pleased to receive Major Wood's letter concerning the article on the subject of Church Broadcasting which appeared in our July issue. We think we made it quite plain that we had no quarrel with the Church of England as a body. The fourth paragraph made this point clear. What we (like Major Wood and thousands of other listeners) took exception to was the unseemly remarks by the Rev. Shand and the apathy shown by the Archbishop.—Editor.

A HUMOROUS ERROR.

In commenting upon the orchestral concerts broadcast by 4QG, a Southern contemporary was recently guilty of a little error, which threw a rather humorous light upon one sentence.

The sentence referred to ran: "Time was when the military band consisted of a few Aboes." Doubtless the last word of this sentence should have read "Oboes."

We know Australians to be natural lovers of music, but we were not aware that the original Australian had any particular leaning to wood-wind instruments, nor did we know that the old military forces relied on "Jacky" and his brethren to lead them to parade!

4QG TO BROADCAST FROM CREMORNE THEATRE.

Listeners to 4QG are to shortly have another splendid feature added to their radio "bill of fare." Arrangements are being made as we go to press to broadcast portions of the revues by the "Snapshot" Company now playing at Cremorne Theatre, South Brisbane.

We understand that these transmissions are to be given weekly.

COUNTRY READERS!

If you are in Brisbane for the Show, call at our Stall at the Radio and Electrical Exhibition. We shall be pleased to meet you. Arrangements have been made for a representative of this journal to be at the stall throughout the Show.

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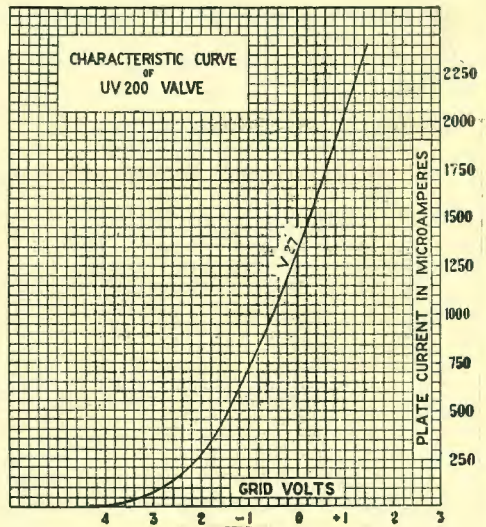
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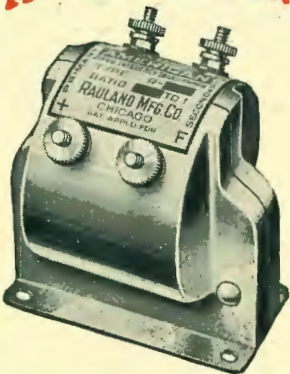
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