

# The Queensland Radio News

"Your Own Wireless Journal"

6<sup>d</sup>



Vol. II.

Tuesday, 1st June, 1926.

No. 5

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

*America  
Acknowledges  
Amplion Supremacy*

THE BEST features and latest developments of radio and phonograph are effectively combined in the beautiful Adler-Royal creation shown above. The price of Model 10 (a 5-tube Neutrodyne Radio-Phonograph with Amplion loud speaker unit) is, without accessories, \$275.00.



One of the  
Famous

**DRAGON  
Class**

**Amplions**

AR 19  
£6-10-0

".. with AMPLION Loud Speaker Unit."

The manufacturers of the famous Adler-Royal are intent on providing the very best that money can buy. Thus it happens that Britain's Best Loud Speaker is incorporated in this famous American Radio Receiver.

The Amplion Range comprises the most extensive selection of Loud Speakers in existence. Prices from £1/15/- to £19/-/-. Ample stocks of all types are now held by the Sold Distributors for Australasia.

The  
World's  
Standard

**AMPLION**

Wireless  
Loud  
Speaker

**Amalgamated Wireless**

*(Australasia) Ltd.*

King & King Buildings, Queen Street, BRISBANE

British Factory Representative:  
WILLIAM BLOGG, 9 Loftus Street, Sydney

# The Royalty of Radio **KENNEDY!**

## A Superb Musical Instrument

### Model V.

Is a 3-valve set of advanced design and good range. It is of graceful appearance having a Mahogany Cabinet with piano finish and the control panel set at an angle most convenient for tuning.

The tuning is extremely simple, the wavelength being controlled by one dial, and the instrument is non-radiating.

PRICE (without Accessories) . . . . .

**£30**

### Model VI.

This model takes four valves and is a popular model for those who are keen on reception from distant stations. The control panel is of etched bronze with brown bakelite dials which match the highly finished Mahogany case.

PRICE (without Accessories) . . . . .

**£35**

### Model XV.

This is a highly selective, long-range set of supreme design in Radio Receivers.

Its 5-valve circuit is made up of two stages of radio frequency, detector and two stages of audio frequency, and with two tuning dials and a special selectivity control, the operator is able to eliminate powerful local interference very easily.

PRICE (without Accessories) . . . . .

**£45**

MODEL ROYAL XVI. is a de Luxe five valve set embodied in a Console Cabinet. This represents the highest ideal of craftsmanship both in Radio and Cabinet work, and is a remarkably fine piece of furniture.

PRICE (complete) . . . . . **£110**

We have just landed a shipment of Model Thirty Kennedy Radio Receivers. Fittingly encased in a burl-walnut cabinet with gold dials and voltmeter face, framed behind oxidized-silver escutcheon plates it is an instrument anyone would be proud to own. Price on application.

**ASK YOUR DEALER**

*or come and see these models and be convinced of KENNEDY SUPERIORITY*

# Home Radio Service Ltd.

QUEENSLAND DISTRIBUTORS,

FIRST FLOOR, COURIER BLDGS., QUEEN STREET, BRISBANE.



# THE PROOF!

FIRST PRIZE

at the

RADIO EXHIBITION  
(SYDNEY)

was awarded for

Selectivity and Sensitivity

to the Receiver Fitted with

# RADIOKES

## PRECISION COILS

for Browning Drake Circuits

— Obtainable from all Radio Dealers —

*Distributors—*

Queensland: Edgar V. Hudson Brisbane.  
Victoria: Louis Coen Pty. Ltd., Melbourne.  
South Australia: Louis Coen Pty. Ltd.,  
Adelaide.  
Tasmania: Medhurst & Sons, Hobart.  
New Zealand: Abel Smeeton, Auckland.

*Manufacturers—*

**KEITH STOKES Pty. Ltd.**  
Montana House  
27-29 KING STREET, SYDNEY



Announcing the Famous

# SUPERTONE RECEIVERS

The most wonderful Sets yet placed on the market, for the discriminating Radio buyer.

## Three Famous Models

Any of the three famous Models will tune all Southern Stations on the Loud Speaker at full volume.

### Distinctive Features

- (1) 4QG can be tuned out at will.
- (2) Full volume with distortion eliminated.
- (3) Range and Selectivity.
- (4) Simplicity of Control.

**B.G.3. 3 Valve £25-0-0**  
COMPLETE.

**B.G.4. 4 Valve £32-10-0**  
COMPLETE.

**B.G.5. 5 Valve £44-10-0**  
COMPLETE.

The three models are complete with polished cabinet, all accessories, 6 volt accumulator, loud speaker, aerial equipment, and with a

### 12 Month's Written Guarantee

Sole Agents :

KELVINATOR ELECTRIC PRODUCTS,  
BURGINPHONE WIRELESS RECEIVERS.

Catalogues, etc., Mailed Free.

## RADIO SUPPLIES Coy.

DENHAM STREET,  
ROCKHAMPTON

# Election Results by Radio

## Huge Crowds Listen-in Outside Newspaper Offices

The recent State election results broadcast by Station 4QG was really the first service of its kind to be enjoyed by all Queensland listeners. The Commonwealth Election results broadcast some few months ago were transmitted before 4QG went on full power and consequently the results were confined more or less to the southern and south western portions of the State.

This time, however, with 5,000 watts to play with, 4QG covered Australasia with the Queensland State election figures, and many people who had that day voted in far Northern Queensland, listened in to the progress of the counts the same evening. It brought home to them more forcefully than ever the utilitarian value of radio.

Whilst their country brothers were listening in on sheep stations and farms, denizens of the city were flocking the result boards which several Brisbane dailies had erected outside of their offices. The Daily Mail in addition to their result board, once again commissioned Messrs. Wireless House Ltd. to erect a system of loud speakers upon the awning of their building. As in the case with the Federal Election Demonstration the Three Valve Dulcephone (with power amplifier) entertained the thousands who gathered outside the Daily Mail Building. From an early hour crowds commenced to gather. The cheering voice of Uncle Ben booming out along Queen Street was the signal for a quick assembly of interested listeners.

This and the following sessions were greatly enjoyed by the crowd who found the musical numbers from the studio welcome entertainment whilst waiting for further results to come through. The demonstration was in the capable hands of Mr. Bob Littler of Wireless House Ltd., and proved this firm's ability in handling the class of work.

Altogether the broadcasting of the 1926 State election results were greatly appreciated, and Station 4QG is to be congratulated upon the efficient and prompt manner with which it was accomplished.

## 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.



Buy  
  
 RADIO PRODUCTS

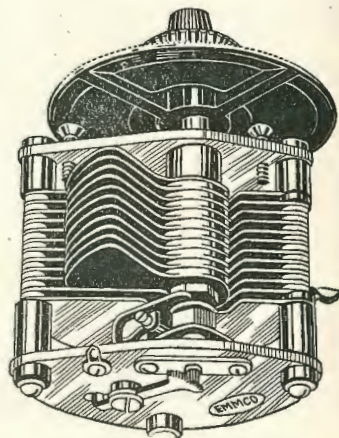
THIS name EMMCO is more than a mere trade mark. It is a definite and undisputed guarantee of efficiency and satisfactory performance, combined with reasonable price. There are no inferior grades of EMMCO products, because every part is manufactured to only one standard—the highest that engineering skill can reach.

**Emmco Lightning Arrestor**



Made  
 in  
 Australia

**Emmco Condenser**



**Emmco Lightning Arrester**

FAR better to be sure than sorry. Every EMMCO Arrestor carries an insurance guarantee to replace any damage up to £25. Your receiver is safe from lightning when you fit an EMMCO Arrestor. Operating on the gap principle, and mounted solidly on a bakelite base. PRICE . . . 4/3

**Emmco Condensers**

ABSOLUTE insulation—grounded rotor and plates—straight line wave-length—most minute adjustment. These are some of the features contributing to the efficiency of EMMCO Vernier Condensers.

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

Manufactured by  
**Electricity Meter Manufacturing Company Limited, Sydney**

THE QUEENSLAND  
RADIO NEWS



A Magazine for Amateurs  
A. T. BARTLETT, Editor

## THE EDITOR'S PAGE

### *A Pin-Thud Heard Across A Continent*

THE simple pin-dropping experiment of the Bed-time Storyman at 4QG on a recent Saturday evening holds infinitely greater significance than many people would attach to it. To some light-thinking folk this experiment merely represented a childish prank given to amuse the children. But to those who think a little deeper, this incident held a greater scientific meaning.

An expression frequently used to convey a state of silence or quietude is the well-known phrase "One could hear a pin drop." Because of its diminutive proportions and lightness a pin is used in this expression to impress the degree of stillness necessary for the pin to be heard. Yet per the medium of radio an ordinary one inch pin dropped into a tumbler before the microphone at Brisbane was distinctly and simultaneously recorded as far south as Nelson, New Zealand, and as far north as Port Moresby, New Guinea. A sound which, under ordinary circumstances is inaudible at 10 yards range, was plainly heard 1500 miles away!

The colossal potentialities of the thought are almost staggering. Ten years ago, had a man ventured to advance such a theory the most learned and respected of our scientists would have not only scoffed at the idea, but they would have greatly doubted the sanity of the theologian.

It is evident that we, as a race, are becoming callous to the amazing progress of Science. I am of the opinion that we are in such a state of advanced civilization that we are fully prepared to accept any invention—regardless of the immensity of its utility—with a calm and almost expectant attitude. Nothing seems to surprise us—so resigned are we to the Sovereignty of Science.

It would do us all good to sit back and think of the countless and wondrous gifts that Science, with her host of clever workmen, has bestowed upon this world, converting and revolutionising it from what it was 100 years ago into what it is to-day.

You will agree that we should at least be grateful.

# FADA Radio Stability

Over 200,000 enthusiastic users are satisfied with the exceptional Standard of Reception delivered by FADA—year after year.

If it's a station miles and miles away, or the one near by, Fada will respond.

If you want this programme now and another soon, you can tune in as easily as you can tune out.

Above all, Fada fairly captivates with its rich clear tones, its musical quality. Your friend for life once you hear the distinct full notes, soft or loud as you may prefer.

Our staff of wireless experts are here to see that you get consistently the full measure of FADA standard performance.

You can rely on us to satisfy, and to keep you satisfied.

COME AND SEE FADA RADIO.

## Three Types of **NA-ALD** Sockets

### New Cushion Socket

*Newest Socket on the Market*

Direct connection can be made either above or below panel. No binding post required. Positive contact and hidden wiring. The period of vibration of the Na-Ald Cushion Socket is so adjusted, that it prevents microphonic valve noises.

Na-Ald Sockets are stocked by us in all sizes with this spring cushion mounting.

### Regular Binding, Post Mounting

Low loss and high resistance are assured with Na-Ald Alden-processed Bakelite Sockets. With the De Luxe type, simply turning the valve three or four times without removing from the sockets scrapes a clean contact on the side of each of the valve terminals. Besides the No. 400 De Luxe Socket and there are the Na-Ald No. 499 Socket for UV-199 Valves and the Na-Ald No. 411 for WD-11 Valves, all Alden-processed Bakelite.

### Na-Ald Rivet Socket

This rivet mounting has been developed especially for regular manufacturers of Radio Sets. These Rivet Sockets eliminate the handling of many extra parts, require but four holes in the sub-panel and permit the use of economical straight line production methods. Common leads of all sockets may be connected by a punched strip under the panel. If you want the best Radio accessories, come and see Na-Ald.

**CANADA** **CYCLE &** **MOTOR**  
**E. C. M.**  
 AGENCY (Q'LAND) LIMITED.  
 Corner Creek & Adelaide Streets,  
 BRISBANE.



# A Radio and Electrical Exhibition for Brisbane

*Brisbane Radio Dealers and Electrical Houses Organising  
Planned for Show Week*

Encouraged by the excellent results achieved in Sydney and Melbourne by the holding of Radio and Electrical Exhibitions during recent weeks, the Radio Dealers and Electrical Houses of Brisbane, acting in conjunction with The Electrical Federation of Queensland, are organising a similar Exhibition to be held in the Exhibition Hall during the coming Show Week, from 9th to 15th August.

Elaborate arrangements are now being made by the committee for the ultimate success of the Exhibition, and nothing is being spared to make the show one of education and of interest.

The radio fan will find endless satisfaction wandering about among the displays of radio apparatus, included in which will be some of the latest material yet devised for Radio reception. Neutrodyne, super-nets, valves, condensers, transformers, loud speakers, batteries, accumulators, battery chargers, amplifiers, wave traps, and the host of other gadgets dear to the heart of the genuine "radio bug" will be well in evidence on every hand.

In addition to these displays there will be a Broadcasting Demonstration nightly, and possibly in the afternoon. Arrangements have been completed with Station 4QG whereby a portion of the usual programme will be transmitted from the Exhibition, enabling the public to see just how a studio programme is broadcast. Artists will appear before the microphone at the Exhibition studio, and the items will be relayed to the studio in the city, from whence they will be broadcast.

The Electrical Houses intend doing their utmost to convince all who visit their section that it is infinitely better, quicker, cheaper and cleaner to "do it electrically." Many interesting displays of the latest electrical apparatus for modern homes will be featured for the home owner and the home builder. Electric Ranges, Radiators, Kettles, Toasters, Percolators, Irons, Fans, Washing Machines, Bath Heaters, Vacuum Cleaners, and Beautiful Electric Fittings, etc., etc., will be arranged before the gaze of home builders, and demonstrators will be there ready and anxious to prove to all and sundry the wonderful convenience which electricity in the home can offer.

Visitors from the country should find the Exhibition of particular interest, and the convenient relative locations of the Exhibition Hall and Royal Show Ground should entice many passers-by to visit the Radio Exhibition.

It is stated that a nominal charge will be made for admission to help defray expenses. A bulky Souvenir Catalogue and Handbook is also being prepared, which will be for sale at a small cost. The Exhibition is being financially guaranteed by some

of the larger Radio and Electrical Houses, but it is felt that there is little or no prospect of the show being a financial failure, for both time and location have been arranged most appropriately.

This Exhibition should do much to stimulate interest in Radio particularly, and it is safe to say that the Royal Show Excursion trains will carry back into the country freight of considerably greater value than they brought down to the city.

Remember, if you are in Brisbane for the Show don't forget to visit the Radio Exhibition—you'll have the time of your life.

## For Simplicity For Tone For Volume

Of clear Speech or Music, the Queen 3-Valve Set is in a class by itself. The best of materials, scrupulous care used in building each Set, followed by searching tests working Southern Stations with an indoor aerial, ensure you a Set which rank with the best of the imported. Call and see for yourself.

**J. T. Greenlees & Co.**

Albert House, Ann Street, Brisbane

P.O. Box 1468

Phone Central 6368

# Station 4QG

## Forecast of Programmes for the Month of June, 1926

Wireless enthusiasts should be very well pleased when they peruse the list of future attractions at Station 4QG. Just before this issue went to press, our reporter called at Station 4QG and secured a list showing the arrangements which have been made to cater for the wishes of wireless enthusiasts during the month of June.

Tuesday, June 1—Brisbane Apollo Club, Lyric Male Quartette.

Wednesday, June 2—An Oldtime Song Night.

Thursday, June 3—Gypsy Smith from Exhibition Hall, Greater Brisbane Municipal Concert Band.

Friday, June 4—Dickens Fellowship.

Saturday, June 5—Metropolitan Water and Sewerage Board Sailor and Soldier Employees' Association, Grand Concert from Albert Hall.

Sunday, June 6—St. Stephen's Roman Catholic Cathedral, Gypsy Smith Mission from Exhibition Hall, Band Concert from Wickham Park.

Monday, June 7—Austral Choir, South Brisbane City Orchestra.

Tuesday, June 8—Brisbane Apollo Club, Centennial Hall.

Wednesday, June 9—"Digger Night."

Thursday, June 10—Gypsy Smith from Albert Street Church, Choral Recital from St. Stephen's Roman Catholic Cathedral, Anglo Quartette Party.

Friday, June 11—Lyric Quartette Party, Savoy Orchestra.

Saturday, June 12—A Comedy in One Act, "The Young Idea," produced by Nell Douglas Graham, Lennon's Ballroom.

Sunday, June 13—Ann Street Presbyterian Church (Morning Service), Wharf Street Congregational Church (Evening Service), Band Concert from Wickham Park.

Monday, June 14—Austral Choir.

Tuesday, June 15—Popular Studio Entertainment.

Wednesday, June 16—Welsh Night.

Thursday, June 17—Lyric Quartette.

Friday, June 18—Savoy Orchestra and Studio Concert.

Saturday, June 19—Lennon's Ballroom.

Sunday, June 20—Albert Street Methodist Church.

Monday, June 21—Austral Choir.

Tuesday, June 22—The Paramount Entertainers.

Wednesday, June 23—Popular Studio Entertainment.

Thursday, June 24—The Bijou Orchestra, Greater Brisbane Municipal Band.

Friday, June 25—A Classical Night.

Saturday, June 26—A One Act Play—"When the Wheels Run Down"—produced by Nell Douglas Graham, Lennon's Ballroom.

Sunday, June 27—All Saints' Church of England, Band Concert from Wickham Park.

Monday, June 28—Austral Choir.

Tuesday, June 29—Popular Studio Entertainment.

Wednesday, June 30—Ithaca Orchestral Society, Anglo Quartette, Federal Band.

## No Need for a Margin of Safety

HERE is no need, when specifying Steel for Constructional purposes, to allow any margin of safety of costs, if you give the job to Harvey and Son. We have proven, over and over again, that our Steel and our workmanship should carry a preference up to 10 per cent. of the tendered quotations. For, we never allow a job to leave our yards that is not "Al at Lloyd's," and ready to put together with the ease of a Meccano Set.

When we tender a quotation you may depend it is cut to a minimum, based on the best of Steel, and the finest and most efficient workmanship.

## HARVEY & SON

"Staunch Service"

Structural Steel Engineers

MARGARET ST.,

BRISBANE

S.A.S.

When speed is essential, our large stocks of steel, our points of distribution and our system of delivery unite to make Harvey Steel Service an influence in the placing of orders.

# CRITICISM

The idea which some people seem to have regarding criticism is aptly illustrated by a perusal of the facts set out below.

Shortly after the new station at 4QG officially commenced its full service the Editor of this paper in conjunction with Brisbane's gifted pianist, Mr. Erich John, arranged and organised an entertainment which was broadcast from Station 4QG.

The entertainment was a varied one and was contributed to by Brisbane's leading artists. The object of this article is not to boost our own concert so we may perhaps be excused if we say that judging by the numbers of letters which reached both this office and station 4QG from all parts of Australia and New Zealand it was, with hardly an exception, highly appreciated.

The transmission of the concert by 4QG was perfect and the evening's programme drew forth expressions of applause from all sections of listeners.

Only one adverse report was received and this came from an individual who did not have the decency to sign his name to his letter. Apparently he was a Government servant for the letter, signed "Sparks" was written on Government paper. In it he severely criticised the whole entertainment and included some very bitter and very personal remarks regarding the ladies and gentlemen, who had given their service to the station. In his miserable epistle he criticised some items that were listed but not broadcasted. His spelling of titles and composers was abominably incorrect—proving his utter ignorance of anything associated with good music.

## A FURTHER ANONYMOUS LETTER.

Some two or three days ago Station 4QG received another letter apparently from the same person. It also was signed "Sparks" and was written on Government notepaper.

The following is a copy of the letter which speaks for itself:—

4QG.

I have been very tolerant and have refrained up till now from complaining to you of our programmes, but the worm will turn. Some nights you put a pleasing show on but more often you pick on such unsuitable stuff—be done with childish stuff after 8 o'clock and let us have merriment. Take more care in selecting the vocalion selections—if you must use them. Some are fine, many are damnable and fit for the garbage tin.

This Bird Imitator you have plagued us with many nights recently should be barred forever. He repeats himself like a recurring decimal and would make any respectable bird start to moult immediately. Thank Heaven the birds go north in May.

Too many brass instrument items. Certainly they are invariably good but with too much of it, even the humble canines nightly raise a fearsome wall of protest.

Voices are pleasing by virtue of their tunefulness and variety, but screams and shrieks are another

thing. This applies to quite a few in the endless procession of sopranos we are deluged with (overstocked somewhat, eh)?

Just think a while before you switch on these and other blots on your programmes and are grinning to yourself, as if you were giving a sick hen some kerosene, and make up your mind to repent and only hand out what you know would really please yourself and others.

Yours, etc.,  
"SPARKS."

The vile grammar used in "Sparks" letter is almost as distasteful as the cringing spirit which would prompt any person to write such an epistle and then refrain from having the decency to attach his name to it.

This paper does not make any plea for a stifling of criticism. On the other hand it considers that good wholesome criticism is helpful to one and all.

But—there is criticism and criticism.

He who criticises should at least be constructive.

We venture to suggest that any letter containing constructive criticism will be welcomed, not only at 4QG but also at any other broadcasting station in the Commonwealth.

## The CONTINENTAL Typewriter For Exceptional Service



Sharp, clean impression—type that lasts indefinitely—keyboard of 90 characters—responsive touch—quiet operation—are but a few of the features of this splendid machine. Recognised everywhere as the Typewriter Supreme.

**B. J. BALL LTD.** Australia n Agents

213 Charlotte St., Brisbane and at Sydney & Melbourne

# The Superdyne Receiver

By H. L. HOBLER, A4DO.

The Superdyne receiver, about to be described, is an uncommon type of wireless receiving set. Its uncommonness is, no doubt, due to the fact that very little data regarding its construction has been made available to the Australian amateur. The Superdyne originated in America, and, since it has proved itself to be a very successful receiver in that country, there is no reason why it should not be successful in this country; hence the reason for this article, which explains the complete construction of a two valve superdyne broadcast listening set.

still fail to oscillate a grid leak to suit the type of detector valve used, placed across the .00025 mfd. fixed condenser in the grid lead to the detector tube may help the set to oscillate easily. However if the receiver is constructed as described and connected up to form the circuit shown in figure 1, no trouble whatever should be experienced in getting the set to work.

No plug in coils are used anywhere in this superdyne receiver. The primary, secondary and reaction coils are in the form of a variocoupler, while the plate coil is of the solenoid type.

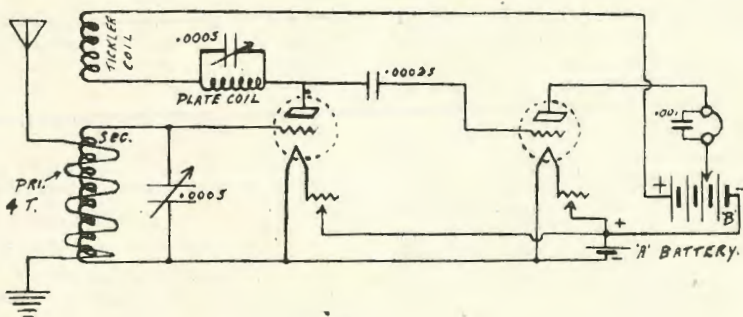


FIG. 1.

The circuit employed in the set described has only recently been designed and appears to be most successful in the many attempts to combine regeneration and radio-frequency amplification. This circuit differs from the usual radio-frequency circuit in the use of the tickler coil. It is found in all tuned radio-frequency circuits, that when all circuits are tuned alike oscillations commence. Various methods have been tried to neutralize this tendency. In the superdyne, it is accomplished by the employment of the tickler coil, which may be adjusted so as to bring enough energy from the plate circuit to the grid circuit in the reverse direction.

It will be seen from the schematic diagram—Figure 1—that the set employs one stage of radio-frequency amplification and detector only. However, should it be desired, any number of audio-frequency stages could be added in the usual manner.

Take a look at Figure 1 and note how simple the circuit is. There is nothing used that is not required. First of all we notice that the aerial circuit is aperiodic—that is to say it is untuned. This dispenses with the usual series or parallel condenser for the primary circuit. The primary coil is wound over the secondary and in this way signals coming from the aerial into the primary coil are induced into the windings of the secondary and then flow to the other apparatus. No grid condenser or leak are shown in the grid circuit of the first valve, but if the receiver fails to oscillate after you are sure everything is correct, or if popping or squealing occurs, try reversing the leads to the rotor of the coupler. Should the set

## COILS.

The coupler form is 4 1-4 inches in diameter and 2 inches long. The secondary winding is wound with 42 turns of No. 22 DCC wire, while the primary winding consists of 4 turns of No. 22 DCC wire spaced 1-4 of an inch apart, wound directly over the secondary. The rotor or tickler coil consists of 18 turns of No. 22 DCC wire wound on the rotor of the variocoupler. The plate coil, which is 4 1-4 inches in diameter and 2 inches long is of the solenoid type, and is wound with 46 turns of No. 22 DCC wire.

It is advisable to use bakelite, radion or other good formers for the coils. If cardboard or other shrinkable materials are used they should be baked in a hot oven before the wire is wound on them. This baking process draws the moisture from the tubes and shrinks them, thereby preventing the wire from slipping off, which would happen in hot weather if the formers shrunk to any extent. It is evident of course that the wire must be wound on the tubes shortly after they are removed from the oven.

The values of the fixed and variable condensers are given in the diagram and to aid the constructor when making the coils, a sketch is given showing the method of winding.

The resistances of the rheostats will depend upon the types of valves used. For bright emitter tubes a rheostat having a resistance of from about 6 to 12 ohms will be suitable, whereas for dull emitter valves the resistance of the rheostats should be in the vicinity of 30 ohms, and not less than 25 ohms.

Good parts—that is those which are electrically and mechanically efficient—should be used throughout if it is desired to get the maximum results from the set. The valve sockets should be of good manufacture, preferably made of glass or porcelain. Good metal shell sockets are satisfactory and if the valve

COILS

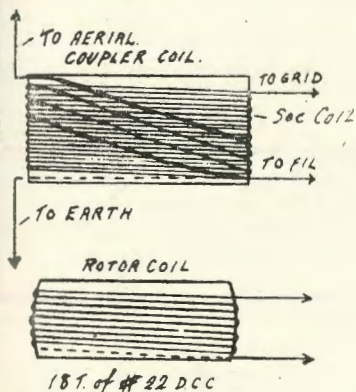


FIG 2.

base is of metal it is of little advantage to use other sockets—unless it is desired to reduce losses to a minimum—when the metal shell on the base of the valve should be removed. Side contact on the valve legs is more satisfactory than point contact, and when purchasing the valve sockets this should be borne in mind.

Methods for the layout of the parts used in this Superdyne receiver will suggest themselves. The coils, if mounted on a baseboard at the rear of the panel will look much neater than if placed anywhere else. The tickler or rotor coil can be mounted on a shaft which passes through a hole in the panel. A calibrated dial attached to the end of the shaft, which should protrude about half an inch through the panel, will permit of the operator knowing at exactly what angle the tickler coil lies in respect to the primary and secondary coils.

The variable condensers and rheostats should be the only other parts mounted on the front panel if neatness is desired. The valve sockets, fixed condensers, etc., can be mounted behind the panel in the most convenient positions for wiring up.

To avoid the possibility of an error in the connecting up of the set the connections will be traced out in detail. Beginners who do not understand schematical or theoretical diagrams should study the different symbols used in wireless circuits. It is very much easier to trace a fault or to wire up a set by referring to a diagram than it is to follow a description.

The connections are as follows:—The lead-in from the aerial is attached to one end of the primary coil the other end of this four turn coil being connected to earth. One end of the secondary winding is connected to one group of plates of the condenser in parallel or in shunt with the secondary coil and this

lead is continued on and connected to the grid terminal of the radio-frequency valve socket. The other end of the secondary winding is connected to the other set of plates in the shunt condenser and this same lead is continued on to the negative or minus filament terminal of both valve sockets and the A battery. The positive or plus terminal of the A battery is connected to the moving arms of the two rheostats, the ends of the windings of which are joined to their respective positive or plus filament terminals on the valve sockets.

One end of the winding of the tickler coil is connected to one end of the plate coil and to one set of plates of the condenser which is in parallel with the plate coil. The other set of plates of this condenser and the other end of the plate coil are joined together and a lead taken from them to the plate terminal on the first or radio-frequency valve socket. From the plate terminal a lead is taken to one side of the .00025 mfd. fixed condenser, the other side of which connects to the grid terminal on the detector tube socket.

The other end of the tickler or rotor coil connects to the positive or plus terminal of the B Battery.

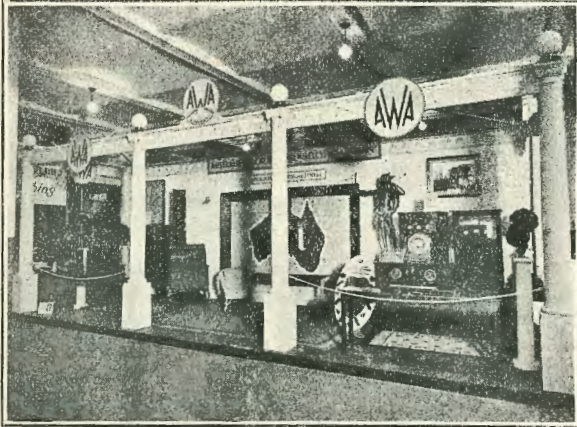
The terminal marked P (or plate) on the detector valve socket connects to one side of the telephone condenser, the other side of which connects to a positive tap on the B battery suitable for the detector valve employed. The head telephones are shunted across the telephone condenser.

When the negative or minus terminal of the B battery is connected to the positive A battery terminal the wiring of the set is completed.

Stout copper wire, preferably tinned, is the best for wiring up, and, if you never wish to burn out your valves or to short circuit your batteries, insulate all wires carrying the A and B battery currents with systoflex, spaghetti or other similar insulating material.

OPERATION.

Operation of the set is simplicity itself. When all batteries are properly connected and the valves inserted in the sockets, turn on the rheostats gradually, listening at the same time with the headphones. When sufficient current has been supplied to the filaments of the valves the receiver will oscillate, probably very weakly. Once the set is oscillating it is ready to pick up signals. Leave the rheostats as they are and adjust the capacities of the secondary and plate condensers until a station is heard, then decrease the filament current to the valves and alter the B battery voltages to the plates of the tubes until signals are at maximum strength. The rotation of the tickler coil will probably make a great difference in the strength of the received item, but be careful not to feed back too much current through the tickler, as this would cause distortion to your reception and interference to nearby stations. So long as you are receiving perfectly pure music or speech and not feeding back too much current to be again impressed upon the grid of the radio-frequency valve, it is safe to say that you are not causing interference to other stations.



## Amalgamated Wireless (Aust.) Ltd. Exhibit

*At the Recent Radio Electrical Exhibition,  
Sydney*

The map of Australia in the centre sets out the Broadcasting Stations of 2FC, 3LO, 4QG, 5CL, and 6 WF, manufactured and installed by Amalgamated Wireless. Each of these stations on the map are represented by intermittent electric lighting and as one lights up, a light appears simultaneously in the aerial which, as will be seen from the photograph, is suspended from the mast on the left hand side, and is held by the Statue of Mercury on the right hand side. The Coastal Radio Stations—twenty-six in number—in Australia and New Guinea, controlled by Amalgamated Wireless, are also set out on the map, but not lit up.

On the right hand side of the stall at the back, are shown the Oscillator and Modulator Units of a five kw. Broadcasting Transmitter.

In front of the Transmitter appears one of the Company's Radiola Supers with the new Amplion Radiolux Loud Speaker resting on top.

In the centre of the map appears one of the new 1926 model Table Type Radiola Supers, while to the left of the map is the Floor Type 1926 Model Radiola Super. Other exhibits included a  $\frac{1}{4}$  kw. Combined Wireless Telegraph, Telephone, Transmitter and Receiver, suitable for inland use, a Radiola 4A and Radiola Crystal Set. A number of Amplion Loud Speakers, surmounted on short white columns are seen placed in various parts of the stall. The Company's Radio and Audio Frequency Transformers, Duo-lateral Coils and Awa Valves were also included in the exhibit.

*When You Buy a—*

## G.A.C. Radio Receiver

You get the benefit of Eighteen Years Radio and Electrical experience.

**5 Valve Set    £37-0-0**  
**4 Valve Set    £29-0-0**  
**3 Valve Set    £22-10-0**

COMPLETE.

We specialise in overhauling Sets, Speakers, Phones, and Transformers and Batteries charged.

*All our sets are Built on the low loss system, which give greater distance, selectivity and easy control*

## G. A. CAMPBELL

**536 Stanley St., South Brisbane**

*Near Vulture St. Section*

Phone J887

## 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"*



**LYRIC MALE QUARTETTE,**

A popular party with 4QG listeners-in. The Lyric Male Quartette is in possession of a very extensive repertoire of male voice part-songs, and will shortly be heard over the ether in a series of engagements.



**Mr. MAURICE GOLDHILL (Baritone),**

A popular vocalist frequently heard from 4QG. His appearances are usually made with the Brisbane Concert Band relayed from Wickham Park.



**STEINFORT'S BROADCASTERS.**  
Frequently heard from 3LO, Melbourne.

# Licenses

## How the Figures are Advancing

The license figures published by the P.M.G. for the month of April, 1926, make interesting study. They prove conclusively the advancing state of Radio popularity in Australia.

State	Total.	New.	Cancelled.	Total % of Population.
Victoria .. ..	53,547	932	1161	3.1
N.S. Wales ..	34,100	5,226	21	1.4
South Australia	11,029	557	1	.2
Queensland ..	5,951	714	1	.6
West Australia	3,759	326	163	.1
Tamania .. ..	1,114	55	1	.5
<b>Total . . . .</b>	<b>109,500</b>	<b>7,810</b>	<b>1348</b>	<b>1.8</b>

In comparison, Queensland seems to be sadly lacking, but when the totals of Queensland and Victoria are compared to the new licenses in each State it will be seen that Queensland is not doing badly. It will be remembered, too, that during this period big 4QG had barely commenced transmissions.

New South Wales seems to be experiencing either a tremendous wave of popularity or else the Radio Inspectors have been on the warpath. 5226 new licenses in one month is an achievement to be proud of, but we feel safe in saying that many months will not elapse before Queensland will equal, if not eclipse, these figures.

**Logging Them All!**

on his "AENOLA"

Twelve Month's Unconditional Guarantee

## AENOLA Receivers

Cheapest Prices — Best Parts Used

**NOTE THE PRICES:**

- Crystal £3-0-0    3 Valve £20-0-0
- 1 Valve £9-0-0    4 Valve £25-0-0
- 2 Valve £14-0-0    5 Valve £32-0-0

These prices include Dull Emitter Valves, Batteries, Headphones, Cabinet, Aerial Equipment and Coils.

Loud Speakers from £2 upwards extra.

Demonstrations and Installations Free

**A. E. NEWNHAM**  
LOGAN RD. WOOLLOONGABBA

(opp. Johns & Co.)

Phone J 4379



## Better Service and Dependability

### featured in WINCHESTER 'B' Batteries

There's long life and power in the Winchester Radio "B" Battery, better Service and Dependability.

Winchester "B" Batteries are guaranteed for 12 months. No other Battery carries such a guarantee.

See these famous Batteries in our Windows and Show Cases, or if out of town write us for further particulars.

# WINCHESTER Radio 'B' Batteries

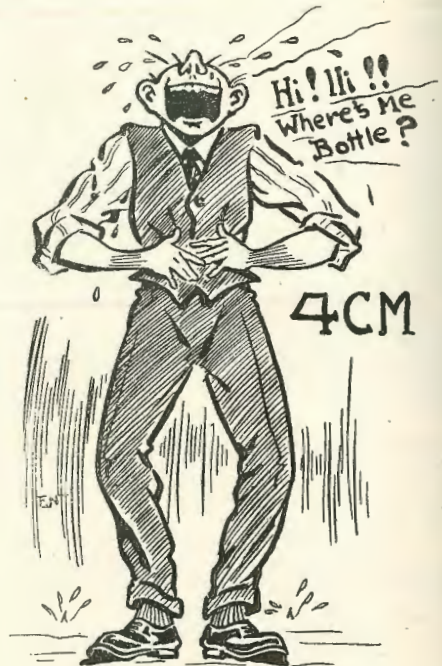
22½ Volt Size  
**13/-**

45 Volt Size  
**26/-**

**AMICO [Q'LAND] LTD.**

*"Brisbane's Electrical House"*

**Queen Street, Brisbane**



## 4CM Blows Up

Station 4CM was the scene of a rather unpleasant incident on the night of Sunday, May 9th. 'Twas midnight—the hour at which the hearts of hams are gladdened by the twiddling of knobs in sincere endeavour to converse with co-hams in distant lands. 4CM was having a brotherly chat to a Penn. (U.S.A.) ham. "Shoot some music," says Penn. "Right!" answered Tom, and forthwith proceeded to adjust the studio gramophone. Two bars of "Sally in Our Alley" had scarce been played, when the stiny night was rent with a loud report, some hisses, several splutterings, followed by a few remarks (?) by the operator.

On looking over the debris, Tom reports the following casualties:—Main motor, filament rotary, tube, and tube transformer.

Never mind, Tom, O.M. Probably some kind ham will buy the bits for his scrap-book.

---

### MORSE CODE INSTRUCTOR

The Proprietor of the "Learn Code Quickly System," whose address is Box 1055 (N) G. P. O. Brisbane, advises that a "Radio News" reader has sent him a postal note for the cost of the system (2/-), accompanied by an unsigned order form.

The postal note was issued at Ayr, and if the sender will forward his name and address to the box given above, the "Morse Code Instructor" will be forwarded to him without delay.



# The Construction of a Low Power Transmitter

*That Functions from a Six Volt Battery, Using a "Ford" Spark Coil*

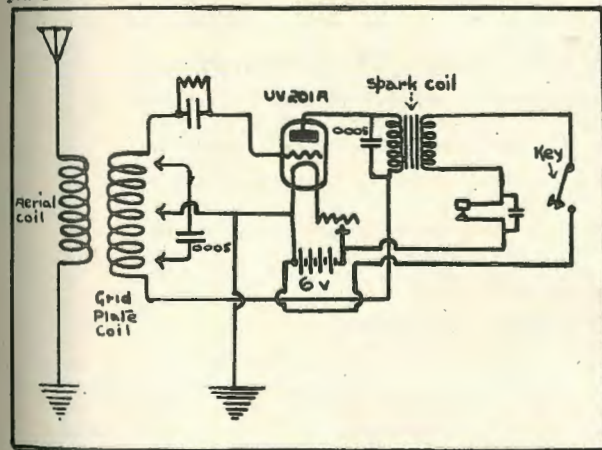
(By T. Elliott, 4CM)

There is little doubt that many radio fans whose enthusiasm takes them no further than broadcast wavelengths would become ardent DX fiends if they only knew how simple was the construction of an efficient transmitter.

Nearly every radio enthusiast—be he broadcast listener or DX amateur, has a "junk box" of some description. Perhaps it contains odds and ends of apparatus that is seemingly worthless yet when "the mistress of the home" threatens to clear out "that awful mess" you are immediately up in arms. No, not for worlds would you part for your junk box. It is your jewel casket and you wouldn't part with those old condensers, broken down transformers, coils, etc., for worlds. You always cherish the thought that SOME DAY they may come in handy.

Well, any reader who would search the ether for DX messages from far-off States and distant lands might well look through his "junk box" and see if he has a spare UV 201A receiving tube, a Ford spark coil, a six-volt buzzer, and a six-volt accumulator. If he has, he can start right now to build a very efficient transmitter which will give excellent results on the experimental short wave-band—35 to 45 metres.

The circuit to be described is widely popular and utilizes a spark coil to supply high voltage to the plate of the valve.



The Aerial should be 50ft. 12 gauge bare copper wire, vertical.

Aerial Coil should be wound with 10 turns 14 gauge bare copper wire on a 3½in. cardboard former, wire and former to be soaked in parriffin wax.

Grid and Plate Coil should be wound with 15 turns of 14 gauge covered wire on 4in. cardboard former, also waxed.

**Spark Coil.**—An ordinary Ford ignition coil is suitable when the secondary wire is removed and replaced by winding 5,000 turns of 36 S.C.C. or enamel wire in layers. The voltage given by the original winding is too high, therefore a lower voltage is needed, which is obtained by the new winding. This coil is operated from the same battery that lights the filament of the oscillatory tube. A condenser made of glass plates and tinfoil, having a capacity of .0005 is shunted across the secondary winding of coil. The action of this shunt condenser is to serve as a reservoir for the energy delivered by the coil and spreads the current over a longer interval of time than would be possible without it.

When constructing the grid plate coil, arrange it so each one of the turns can be connected when searching for the right number of turns. It is advisable that when winding the turns to leave a space between each turn the same diameter as if the wire was used. The number of turns in the aerial coil is wound on and spaced the same as grid plate coil but not tapped. The two coils should be arranged so as to vary the coupling.

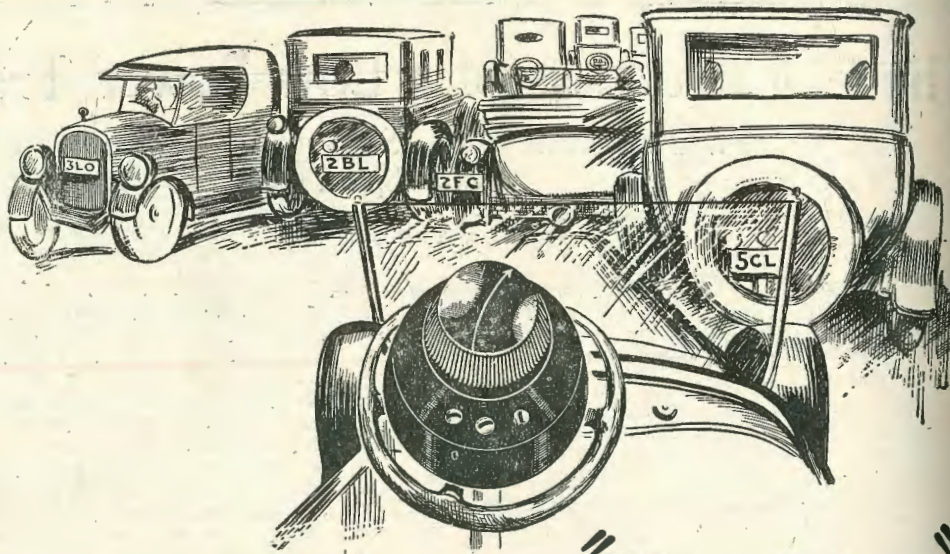
If the ordinary make and break of the Ford coil is used, the resulting note is very low. If it is desired to raise the note I would suggest that an ordinary buzzer be connected in place of the Ford make and break, and to get best results from it, the primary of the coil should be rewound with 420 turns of 24 gauge covered wire.

The coils of the buzzer when functioning should pass from half ampere to one ampere. If this is not the case, remove the windings and replace with heavier wire and increase the number of turns by one-fifth.

The tuning of this transmitting circuit is very easy and if a small flash lamp bulb is placed in the aerial circuit it will serve as a radiation indicator. For fuller information on the tuning of this circuit, read last month's notes on tuning in the article entitled "A Short Wave Receiver."

The success of covering long distance DX on short waves depends largely on the patience of the operator. The prospective amateur may become disheartened because occasionally he may call for nights at a time and receive no reply although the set is "perking" good. The only drawback in short wave work is the deceptive reading of the aerial ampere meter and thus I would suggest that aerial meters should be scrapped.

Now then, if you feel the urge to join the army of DX amateurs set to work right now. You'll find short wave work a fascinating pastime, and you'll also find any of the 4's only too pleased to give you a helping hand along the way.



# Through the "RadioTraffic"

When you run into a bunch of high-powered broadcasting stations, all riding the ether at the same time, can you pick your way through to your desired destination without getting tangled up in the jamb?

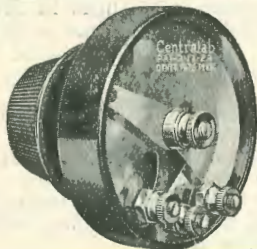
## The CENTRALAB Radiohm

will enable you to get through the Radio Traffic with ease—slip past unwanted "locals," and bring in the long-sought-after long distance Station, loud and clear.

Smooth variation from zero to 200,000 ohms. Especially adapted to plate circuit control of oscillation. Centralab Radiohms and Modulators are used as the standard Units of control by all the top-notch American circuit designers

RETAIL PRICE

14/6



### The Centralab Modulator

A 500,000 ohm Amplification control that gives perfect control from a whisper to maximum volume.

Used by United Distributors in the new "Capacityne" circuit.  
RETAIL PRICE, 14/6.

If your dealer cannot supply you write, sending his name to us.

UNITED DISTRIBUTORS LTD. (Wholesale Only)

72 Clarence Street, Sydney.

343 Queen Street Brisbane.

664 Bourke Street, Melbourne.

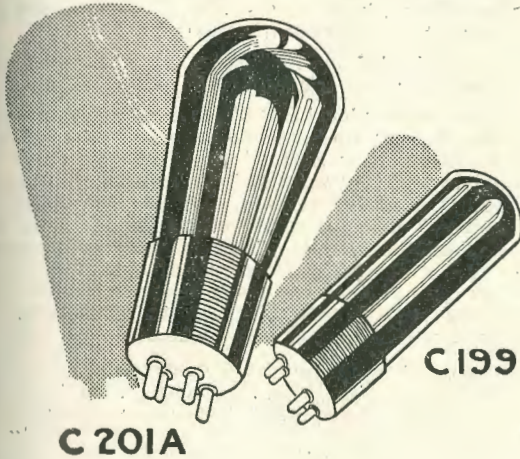
26 Queen Street, 27 Chesser Street, Perth, Adelaide.

Cnr. Jervois Quay and Harris Street, Wellington, N.Z.

# CONTINENTAL VALVES

*NOW* **12/6**

During this season's boom-time of American Radio, **QUALITY** and **DURABILITY** has produced enormous sales. Quantity of sales has lowered cost of production, and thus we can now sell these Valves at 12/6 each.



The Valves are the product of years of research and experiment by the engineers of the Continental Tube Laboratories of Chicago. They are now non-microphonic—uniform in construction and noted for their extremely reliable service and long life.

Each Valve is tested before leaving the stores of the Advertisers and carries an unconditional guarantee of service and quality.

### Type C201A

Detector and Amplifier. Fil. Volts, 5. Fil. Amps., 25. Plate Voltage, 15-140. **RETAIL PRICE .. 12/6**

### Type C199

Detector and Amplifier. Fil. Volts, 3. Fil. Amps, 106. Plate Voltage, 15-80, with 199 or standard base. **RETAIL PRICE .. 12/6**

WHOLESALE ONLY FROM

## UNITED DISTRIBUTORS LTD.

72 Clarence Street,  
Sydney.  
664 Bourke Street,  
Melbourne.

343 Queen Street, Brisbane.

27 Chesser Street,  
Adelaide.

26 Queen Street,  
Perth.

Cnr. Jervois Quay  
and Harris Street,  
Wellington, N.Z.

If your Dealer cannot supply, let us know at once

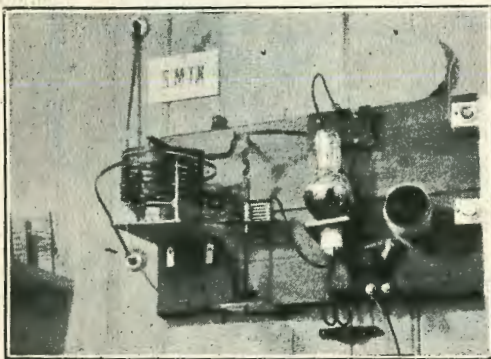
## With the Hams

(By "XQ.")

Well folks! Winter is here again and even though "OM Static" seems to be making quite a lot of bones about singing his swan song and signing off—for a few months, the conditions show a marked improvement so far as the reception side is concerned. DX from the transmitting point of view, however, seems to be on the decline, the reason being that most of the DX countries, U.S.A. and England for example, are in the north temperate zone and are now in their summer months. A few of the southern zone countries are awakening and already two of our "five watt" locals, 4GO and 4RB, have been QSO Chile and have received good reports. 4RB started by "clicking" 2LD Santiago while "GO" "chewed the sock" with 9TC at Los Andes a few nights after.

Several large toobs have been apoppin' of late with the results that both 4AN and 4CM are now using O.S. ones. 4AN's old Mullard O50, which perked so well for ten weeks or so, passed away at a critical moment due to slight "overcrowding."

4CM shot a Z3 "bottle," rotary converter, and his 2000 volt D.C. generator—all in one hit! He had been trying fone on 35 metres for a few nights and was getting things into fine order, being reported QRK in U.S.A. But it came to pass that on the third day there was much wailing and gnashing of generator sprockets, belching of fire, smoke, bad language, etc., whereupon the OM denounceth Radio and all sundry. However, he has since put back the high frequency A.C. generator, patched up the converter and acquired a big bottle. He now warms his feet by the light of a "T250."



SWEDISH—SMTN.

Owned and operated by Goran Kruse, of Stockholm, Sweden. Showing transmitter layout of the well-known amateur, whose signals have been heard practically all over the globe when using inputs as low as 4½ watts! A Mullard o-50 tube is shown in photograph.

4CM reports a QSO with Finland, 4AN has succeeded in working a few European hams, including Swedish—SMTN. 4RB has added France and Netherlands to his "worked" list.

4AN has installed a T250 tube but is at present running it on half power, a big improvement has

been noted in his QSB, which was previously of a rather rough R.A.C. character.

4RB QSY'd to 18 metres the other night and worked Aussie—3MY, who was on 20 metres—right off the bat. Signals were reported slightly weaker than when on 35 metres and fading was very bad otherwise N.T.B. as the going ses. It's a wonder there is not more DX stations around this QRH. There are naturally far less Aussies but it should be a good wave for DX work unless one happens to live near a "Ford" motor works. Generally all types of electrical engine ignition put out some fine QRM on this QRH, and needless to say, faithful "Henry" is not left in the background! Static on 20 metres . . . well I won't convict myself by saying it's actually nil, but I can honestly say that I've heard darn little of it down there.

4GO who has opened up not so long ago on 35 and 80 metres, is punching decent sized holes in the ether with an "Apex" five watter, using 10 to 15 watts input. Heard a Yank answering him the other night, likewise Chilean—9TC. Excellent work for a start OM! Congrats!

Heard 4CW on 37 metres a few weeks back. Rather weak sigs. but a good steady pure D.C. note.

One of our local B.C.L.'s, under the nome de guerre of 4SU, put up some noteworthy work with Z1AE, Auckland, New Zealand on 80 metres, using his receiver with 240 volts A.C. on detector, as transmitter. Heard 1AE report him R6! A few other "boot-leggers" have been disturbing the air with cribbed and unofficial calls. This is nothing uncommon in some of the other States, South Australia as a shining example, but it doesn't seem as though they are going to have their own way in "li'l ole Sunny Q." Be careful OMs, get your tickets!

Two of the Toowoomba chaps, 4CK and 4WB, are heard occasionally on 35 metres. Both have worked U.S.A. and have good D.C. notes. Worked "WB" the other Sunday, just at sunset; his sigs. were fairly screaming in here but after a long "chew" I noticed that strength had been gradually fading as darkness came over. Heard him again at 7 o'clock (about an hour later), and was surprised to find his sig. strength only one third of what it had been at dusk! Has anyone else made similar observations between here and Toowoomba, along this line?

4WI will be off the air for a few days as it has been necessary to again shift the club rooms. A new "All-Wave" transmitter will be installed, and an hour's Morse practice will be broadcast weekly on a QRH to be arranged later, probably 230 metres. The transmitter will also be used later for standard frequency transmissions when an accurate wave-meter is installed.

By the way, have received particulars of the Wireless Institute Trans-Pacific Tests, which are to be staged between May 22nd and June 5th. All transmitting stations have been forwarded full particulars but for non-transmitters the following may be of interest:—(6) Stations not operating transmitters can forward a receiving log only. The reception of any one TEST message (500 words) with an accuracy above 75 per cent. will entitle the operator to an institute "A grade amateur receiving station" certificate. (7) All such logs and details must be forwarded to test-headquarters before June 10th."

20 metres should be gaining in popularity now as many of the Yanks will probably be QSYing to get away from their bad summer conditions on 40 metres. Keep a lookout down there.

NKF the Naval Laboratories, Bellevue, Anacostia, D.C., U.S.A., has broadcast the following QST:—"NKF will transmit daily on 25 metres, from 9.30 a.m. to 10.00 a.m. (Eastern Standard time, U.S.A.), and from 2.30 to 3.00 p.m. (E.S.T.), and is always working on 11 to 21 metres between 1 and 2 p.m. (E.S.T.). Reports on reception appreciated." (Note—E.S.T. is 22 hours SLOW of local time.)

80 metres (after 10 p.m.) is beginning to show signs of real life again. I think it is quite safe to say that a good many more actual tests are carried out on 80 metres, on a good night than there are on 35 in a week! Low power and fone seems to be the vogue.

2AB, Sydney, N.S.W., uses a UV199 receiving tube with 90 volts on plate and is quite strong in these parts, considering his low input. He has worked Z1AF, Auckland, N.Z., on the same power—FB! It is also hard to believe that 2FR can make such a noise with only 60 volts on a 201A. Strength would certainly do justice to a five watt.

Z1AF is now using a 203 bottle on 80 and 35 metres, his strength and note are good on both QRH's.

ANDIR, the Military Aerodrome at Andir, Bandoeng, Java, is heard nearly every morning, after 5 a.m. on 38 metres. TUY, a Norwegian Station, another consistent bird, is often heard on 30 metres working other Europeans.

A few Chinese hams are now on the air, using for their intermediate "FC—" 8EM, 8XX and 8FLO at [redacted] ghali are regular representatives. Heard Japanese—1KK and JOC in QSO the other night rattling out some queer code of their own. Bet that old chap, Morse, would get a headache if he had to compile the Jap. code! JS—1AA ITS and 3AA are heard occasionally and are all well adept in English lingo.

KFUH, the American yacht, "Kamiola," is making a lot of QRM on 34 metres lately. I believe they intended putting in at Brisbane until the skipper changed his mind. Would have been some fine junk for the local talent to look over. KFUH at the time of writing is somewhere between New Caledonia and the Santa Cruz.

Most of the European hams are now using a lower wave band, viz., 28 to 34 metres, their signals are slightly better down there and static is not as noticeable. There are still a few left on the 41—46 band so a big disadvantage is that a station listening for replies from "GS" for instance, is expected to listen over a wavelength range of 28 to 46 metres, which in most cases the tuning range of the usual low loss receiver will not cover. Secondly, the answering station or stations stands a greater chance of not being heard.

Maybe the South African receiving conditions will be somewhat better this winter. Several of our local [redacted] are hoping so anyway as it is their last continent to QSO. The "Fly in the Ointment" to become eligible for membership of the "Worked-All-Continents Club," a new International exclusive society into which only "he man" hams can be initiated. It should become quite a popular institution and stimulate a greater interest in DX.

## Heard from 4QG



MISS EILEEN McLENNAN,  
(Soprano).



MR. GYPSY SMITH.

The world-famed Evangelist whose services from the Exhibition Hall will be broadcast from 4QG on the following dates:—

SUNDAY, JUNE 6th.—Afternoon and Evening Services from the Exhibition Hall.

TUESDAY, JUNE 8th.—Midday Service from Albert Street Methodist Church.

THURSDAY, JUNE 10th.—Midday Service from Albert Street Methodist Church.

MONDAY, JUNE 14th.—Midday Service from Albert Street Methodist Church.

Mr. Smith has reached Brisbane on a record world tour and it is felt that listeners will appreciate the unique opportunity of hearing this famous Evangelist.



THE BRISBANE MUNICIPAL CONCERT BAND.

Whose concerts relayed from the Wickham Park Band Stand and broadcast by 4QG every Sunday night are greatly enjoyed by listeners. This splen-

did band also provides an hour's music from their practice room every Thursday evening. This band is conducted by Mr. E. Jackson.

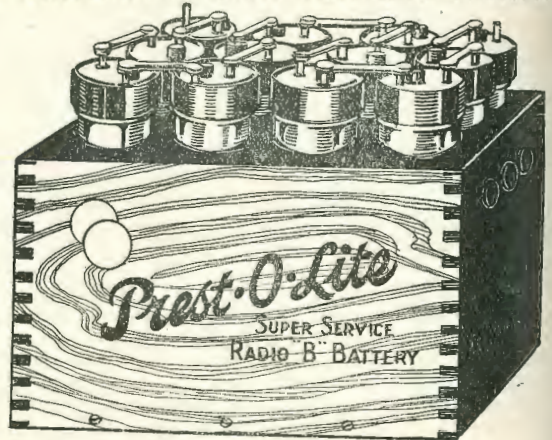
## Strong, Silent POWER

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**  
**BRISBANE**

Service Station:  
 WICKHAM ST., VALLFY

Head Office:  
 ADELAIDE STREET

# STANDARDISATION

## Education by Radio

### CONFERENCE DEBATE.

The Interstate Wireless Conference concluded its sittings on May 5th, after animated debates on the contentious matters of license fees and the future control of wireless in Australia. After a prolonged discussion it was recommended that the Federal Government should appoint an advisory board to assist in the administration of the broadcast regulations.

#### INSUFFICIENT REVENUE DEPLORED.

Regarding the proposal for the abolition of the license, it was then unanimously agreed: "That this conference deplores the fact that the revenue received by a class of broadcast stations which are public utilities is insufficient to provide a satisfactory and developmental service, and asks that the Royal Commission consider this question for the purpose of determining ways and means of providing a service satisfactory to the public, and to the further development of radio."

#### STANDARD WAVE LENGTHS.

A proposal that the Royal Commission should consider the advisability of confining the commercial broadcast wave length in Australia to within the standard length of from 200 to 600 metres created an animated discussion. Representatives of the trading interests, urged the standardisation, in order that American and other neutrodyne sets might be sold cheaply in Australia, whilst other speakers contended that the interests of the working class and the users of crystal sets should be considered. After a prolonged debate, it was decided, by 10 votes to 9, that the conference should take no action in regard to wave lengths. The chairman said the matter could be brought before the Royal Commission by the traders on their own initiative.

#### INCREASED MARGIN WANTED.

The conference, on the motion of Mr. Harry W. Wiles, requested the Postmaster-General to increase generally the margin of wave length between the stations 4QG, 2BL, 3LO, 3AR, and 5CL.

Mr. Maclardy (2BL) said the Postmaster-General had already intimated that the wave length margins between these stations was already being considered by the Post Office Department, and that the new allocation of wave length would be allocated within a few weeks.

Mr. James Nangle (director of Technical Education) presented the report of sub-committee on education, which was adopted. The committee commenced the work of broadcasting by transmitting high class music and educational talks, but it was considered that there should be a committee to supervise the class of instructional programme to be

transmitted, and suggested that extra financial assistance from Government funds should be given for the educational work of the broadcasting stations. It was mentioned that the New South Wales State Department of Instruction had appointed a special committee to investigate the potentialities of wireless in educational matters. Many schools had purchased receiving sets, and had appointed special officers to supervise the educational items to be submitted to the pupils.

#### ENDED IN FAILURE.

These attempts, generally speaking, ended in failure, owing to the unsuitability for this work of the receiving sets available in the schools, or the inability of the officers concerned to handle them to the best advantage. The committee recommended: (1) That a standard wireless receiving set should be devised and that the schools should confine themselves to that standard design; and that all sets used in schools should be inspected and approved by inspectors of the Department of Education. (2) That the State Education Department should be asked to consider the advisability of confining the wave length of these standard receiving sets to that most commonly used in broadcasting in England, the United States, and in this country. (3) That to prevent wireless instruction supplanting ordinary teaching instructions in the schools, the sets might be used in the early part of the evening rather than in the day time.

#### COMMITTEE OF ADVISERS.

In view of these considerations the committee recommended that the conference should urge the Directors of Education in the different States to bring into existence a committee of advisers, consisting of educationists and radio experts, with a view to making a further attempt to utilise wireless as an educational aid.

Mr. Gillies (2MK, Bathurst) proposed, and it was unanimously agreed, that the Royal Commission should consider the value of the news and entertainment services to radio, and as those "B" stations helped to secure an increase in license fees for the "A" class stations, with a view to a proposal being made for a Government grant to "B" class to cover working expenses.

The conference unanimously agreed to submit a request to the Postmaster-General to take immediate action to prevent the continuance of the interferences with broadcasting by commercial radio and naval wireless stations, as this interference was against the development of wireless in Australia. A long discussion followed on the motion "that a board of control be appointed to administer radio in Australia in future." It was eventually agreed to amend the proposal to "that the conference is in favour of an advisory board representative of all interests being created and appointed by the Federal Government to

assist in the administration of the Wireless Telegraph Act and regulations." This motion was carried on the casting vote of the chairman.

### FIGHTING MONOPOLIES.

Mr. Taylor, in declaring the conference closed, said he had been fighting monopolies in wireless in Australia since 1910, when he opposed the establishment of a German Telefunken station in the Commonwealth. "This battle for the open way for the development of wireless has continued to the present day," added Mr. Taylor. "I have given three world tours to the study of the situation, and I find that there are certain monopolies, one of which is associated with a company in Australia, in which the Federal Government is interested—a monopoly that is doing much to hamper the best public utilisation of radio. The interests in the company referred to have such interlinking with foreign countries that the British Post Office will not allow it to have any control of radio as far as the British Empire is concerned, which is one reason why the representatives of the Australian company in which this monopoly holds a great power would not be considered by the British authorities during a recent visit." Mr. Taylor concluded by stating he had important papers from British people who were fighting this monopoly in Britain, asking him to co-operate in Australia. He would place all these papers before the Royal Commission on wireless when it sat.

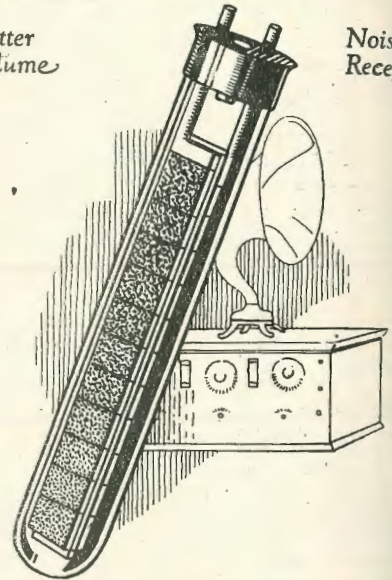
## Australian Made Radio Products

A new standard in Australian made radio products has been set by Electricity Meter Manufacturing Company Limited, Sydney, makers of the well known Emmco radio parts. This company, which is one of the largest engineering enterprises in Australia, gives constant employment to about five hundred Australian workers whose wages average nearly £2000 per week or £100,000 per annum. At the factory at Camperdown, which has a floor space of 36,000 square feet, the famous "Beta" Meters are manufactured under conditions of mass production, and these are turned out at the rate of 130,000 per annum or one meter every seventy seconds. Thousands of "Beta" Meters have been installed by the Councils of all the capital cities, besides over one hundred electrical undertakings throughout Australia. The factory is entirely self-contained, every tool and every piece of apparatus used in the construction of the meters being manufactured in the building.

Realizing the tremendous field for high grade and yet reasonably priced Australian made products, the Company turned its attention to this phase of business and to date has manufactured over 40,000 transformers alone. Production at present embraces transformers, jacks, variable and straight line frequency condensers, rheostats, potentiometers, vernier dials, lightning arrestors, valve sockets, bakelite coil plugs, chokes, etc., and in the near future, Super Heterodyne kits and Emmco headphones of 4000 ohms will be placed on the market.

Better  
Volume

Noiseless  
Reception



# "EUSCO" "B" Accumulators

It is folly to pay fabulous prices for imported tariff-laden accumulators, when the EUSCO—Australian made and guaranteed—may be bought at **LESS THAN HALF** the price!

Each of the Eusco's 6-inch cells have a 2,000 milliampere capacity and spacious acid circulation. The heavy plates ensure a slow consistent discharge and every cell is **FULLY GUARANTEED**.

PRICE per 2-Volt Cell (fully charged) is only **2/-**

Thus a 40-Volt Accumulator may be bought for £2 (unassembled).

An extra charge of 25/- is made for assembling cells in acid-proof carrying case (with lid), burning on connecting lugs and connecting up.

Ask your dealer for EUSCO A and B Accumulators, or come direct to—

## Electric Utility Supplies Ltd.

Duncan Street, Valley, Brisbane,  
Next to New Valley Theatre.



# PERSONALITIES

Mr. Doug. Brown, a well-known Ascot radio fan, has just returned from a trip to the Land of Sky-scrappers. Doug says that the crack Australian broadcasting stations compare with second-rate American stations. Now O.M., Uncle Sam's been getting at you. The Australian listener is catered for excellently, and authorities state that our programmes on the whole compare very favourably with those of overseas stations.

Young Stevenson, a well known member of the Wireless Institute, is now attached to the staff at 4QG as cadet engineer.

Mr. Keith Richardson (4KR) late of Barcardine, has changed his abode to Windermere Road, Ascot. He states he intends installing a 150-watt transmitter soon. Nice place to live, Keith; all the heads live at Ascot y'know; oh my, yes!

Mr. Jackson (late of Amalgamated Wireless Ltd., Sydney) is now attached to the engineering staff at Station 4QG, Brisbane.

Here's a novel stunt. Mr. Percy Tweedale of Albion who runs a For-Hire Car, has installed a small broadcast receiver in his car so that he can sit back and "toon-in" whilst waiting for business. Why not convert the old bus into a caravan, Percy, and tour the country giving radio concerts along the banks of the Warrego or some other quiet spot? We charge you nothing for this valuable bit of advice.

The officers' mess at the artillery camp at Fort Lytton relieves the monotony of camp life with broadcast music. The super six receiver was kindly loaned by United Distributors for the duration of the camp.

There has been some speculation among local amateurs as to what is going to become of 4QG's temporary 500-watt transmitter. Some suggest that 4QG may emulate the successful example set by 6WF in broadcasting simultaneously on two wave lengths. It is considered that the small transmitter on a very short wavelength will reach further than the big transmitter on the normal wavelength. Anyway it is worth noting that while 6WF is seldom heard on his higher wavelength in Brisbane, he is quite easily logged on his shorter wavelength.

Mr. Charles Runge, radio manager for Finney Isles Ltd., is at present basking in the sunshine at Coogee, Sydney, on his holidays. Lucky dog!

Mr. A. Calcino, a well known resident of Charleville, is at present in a state of intoxication. We hasten to inform readers that his condition has not been brought about through worshipping too devoutly at the shrine of Bacchus; it is merely his state of mind following the wonderful results he is getting with his new six valver.

Mr. H. Blaiklock, manager of United Distributors Ltd., finds great relief from radio problems generally, in an enjoyable game of tennis every Thursday afternoon. Eye witnesses state that he looks the picture of manly vigour as he doubles round the court in his nicely pressed creams. It is also said that he can sure wangle the tennis bat and that his transmission is just as good as his reception.

Mr. T. H. G. Hudson, manager of Station Supplies, keeps the home fires burning with a handsome broadcast receiver he has just installed at his residence, while Hudson Junior, a promising three-year-old listens in on his crystal set.

Mr. Bob Littler of Wireless House Ltd. has visited Laidley, installing radio receivers for his company. He reports good reception in this locality.

Listeners of Nundah unanimously agree that Mr. Tom Starkey has the loudest set in the district. Every night the voice of his big loud speaker can be heard bellowing about the neighbourhood. It's jolly clever of you to be able to pull 'em in loud, Tom, but it's not a good advertisement for radio generally. Soft pedal a little O. M.

Mr. Con. Daley has just returned from a northern trip selling radio receivers for the C. C. M. Con reports "good bizz."

A raw amateur who had just installed a set, asked me the other day the reason why 4QG requests their listeners to "stand by" their receivers while they switched on to land-line transmissions. He wanted to know was it necessary for him to line the family up alongside the set while the change was being made. He seemed quite relieved when he knew that they could remain seated in spite of 4QG's request to "stand by."

Listeners in the metropolitan and suburban area who complain of being unable to tune in southern music while 4QG is transmitting should listen to 2FC. With careful tuning on 1100 metres it is possible to pull this station in and cut 4QG completely out.

Mr. Rundolph Herschfield of United Distributors Ltd is reputed to be the dandiest radio salesman in the trade. His socks invariably match his eyes and his neckties are things of wondrous beauty. He has a winning way, has Rundolph. Is it any wonder that he has been dubbed the "super salesman of super sizes?"

# 3LO's Programme Competition

At last the bluff of the amateur programme makers has been called. Ever since 3LO, Melbourne, started broadcasting, critics have been busy pointing out how badly the programmes have been arranged and how this, that or the other item should be cut out or put in. Of course all these criticisms were dictated by the personal taste of the critic. If he liked dancing, he resented topical or educational talks and thought that everybody else must agree with him. If he was a rigid churchman, he deprecated jazz and all the ways and works of the devil as symbolised by syncopated music. One thing about these armchair critics forces admiration. They are not afraid to write to the papers about it. In a white heat of indignation at the snappy description of a boxing match, Paterfamilias would take pen in hand and write to at least three editors, setting forth the reasons why Church and State were in danger from the perversion of the morals of the young, coming over the air. Mother of twelve had no peace until she protested against talks by Dr. Loftus Hills on the virtues of brandy and wine while Shakeafoot, burned with indignation when "Don't bring Luu" or "Ukelele Lady" gave place to Alberto Zeiman and his orchestra.

It was all very funny for the reader, but not so funny to Major Conder, 3LO's director.

The worm has at last turned. This "turn" is costing 3LO £50, and the "Sun Pictorial" is adding another £50, but it is worth the money to demonstrate how hard it is to devise a programme that will give everyone pleasure. Of course, the thing is impossible.

3LO has invited subscribers and others to send in their ideas of a perfect programme. 3LO will provide the artists and will put the six best programmes on the air. I can well imagine some of the programmes that will be submitted, highly specialised affairs, drawn up to suit only particular sections. The great virtue of a 3LO programme is that it is arranged to suit every variety of taste, from the highbrow to the man with no brow at all. As far as I have been able to discover the only opportunity the company has missed has been the broadcasting of a Pleasant Sunday Afternoon with the Wanderers of Fitzroy, or a Welcome Home tendered by the Chauffeurs' Association to a Yellow Cab driver. But then you can't have everything.

For the next two or three weeks the wireless will be silent, and weary valves will have a rest, while mother and the girls go after that £50. Can't you imagine the scene—Mother asks, "What was that bonzer thing we heard at Alice's last year? I'd like them to play that. Something about a nest and feathers. I'll just stick that in. They'll know it, I expect." Father wants to know why the devil they can't sing some of the songs his mother used to sing—"They can't write songs like that to-day" he growls, and lights his pipe.

Kate looks up from her work and asks, "Pa, what's an aria?" "A large waste space," says Pa, and "Too

right" chips in his eldest son, who hates classical music. "Stick in a footy match, while you're about it" he advises, as he prepares to leave for a game of billiards. "I like something with a bit of noise about it."

That will be pretty near the mark in a thousand homes.

By the way, 3LO might take that tip about a football match. The shouts of the people and the distressed cry of the umpire as stones rattle on his ribs would be an interesting item.

When the listeners-in come to do the judging, the fun will begin. If 3LO sometimes "gets the bird," what will happen to the six programmes that have been selected from the thousands sent in. Every competitor will have his stone to shy at any prize-winner and I estimate that where a dozen now take pen in hand and throw a few brickbats, a thousand will have some kind words to say about the amateur—especially the amateur who has the bad taste to win £50 that should have been in the pockets of at least 1000 more deserving competitors.

## OREGON WIRELESS MASTS

**I**N the use of Masts to carry Wireless Aerials, Rosenfeld's Oregon has proved to be the most serviceable. The Oregon for these masts is specially selected. Call, 'phone 5991, or write to us for further particulars and prices of Wireless Masts.

You can purchase your Masts in one length of Oregon Pine, from 30ft. lengths of 3 x 3, to 80ft. lengths of 6 x 6, also 4 x 4, and 5 x 5 to any length.

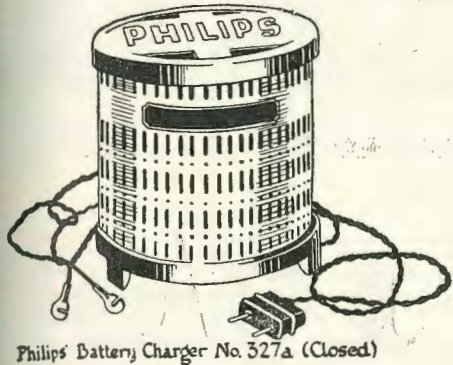
### Rosenfeld & Co. (Q'ld.) Ltd.

"The Oregon Specialists"  
TIMBER MERCHANTS.

Moray Street, New Farm, Brisbane  
'Phone C. 5991.

# No. 327

For Charging Radio Batteries



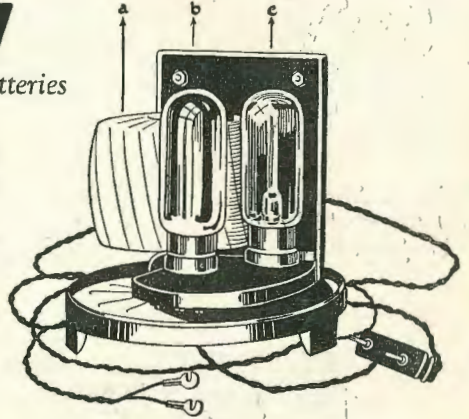
Philips Battery Charger No. 327a (Closed)

No. 327A for charging "A" Batteries.

PRICE, . . . . . **£6**

No. 327AB will charge either "A" or "B" Radio Batteries.

PRICE . . . . . **£6/17/6**



Philips Battery Charger No. 327a (Showing Cover Removed) a-Transformer Coil b-Rectifying Valve, c-Current Regulator Lamp (No. 328)

## Advantages

- No transportation of Batteries.
- No risk of Spilled Acid.
- Charge any time—day or night.
- Perfect control of charge.
- Noiseless.
- Absolutely foolproof
- Automatic current regulation.

# PHILIPS BATTERY CHARGERS

## Advantages

- Can charge "A" or "B" Batteries.
- No more disappointments through "A" Battery being run down.
- Full Wave Rectification.
- No contacts to stick.
- Shockproof.
- It's a PHILLIPS Line.

# No. 366

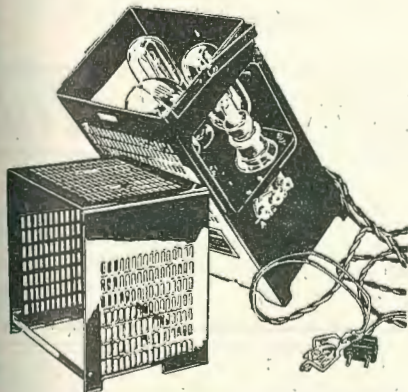
will charge Batteries up to and including Motor Car sizes.

Charging Rate (up to 8 volts), 6 amps.

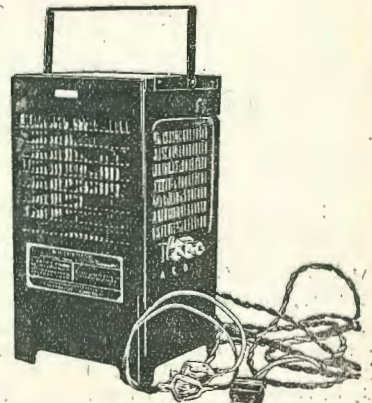
Charging Rate (up to 14 volts), 3 amps.

No. 366A charges 1 to 7 cells. (2 volts to 14 volts) .. **£8/10/-**

No. 366AB charges 1 to 7 cells. (2 volts to 14 volts), also charges "B" Batteries, **£9/7/6**



No. 366a MOTOR CAR BATTERY CHARGER SHOWING COVER REMOVED

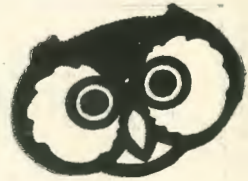


No. 366a MOTOR CAR BATTERY CHARGER CLOSED



Friends, Amateurs and Listeners !!! Lend Us Your Ears !

# HEADPHONES



Wise Men Quickly Discern WIRELESS HOUSE Values !!

**15/-**

**17/6**

**30/-**

**39/6**

**M  
E  
L  
L  
O  
L  
O**

**D  
U  
L  
C  
E  
P  
H  
O  
N  
E**

**B  
R  
A  
N  
D  
E  
S  
D  
E  
S**

**B  
A  
L  
D  
W  
I  
N**

4000 Ohms

8000 Ohms

Matched Tone

Type F

*For Quality, Sensitivity and Value these Headphones are Unexcelled !*

### NEW LINES

Blow Torches 9/6, Cardboard Formers 2in., 2½in., 3in., 3½in., 3¾in. at 6d. and 4in., at 9d., High Grade Soldering Irons 2/-, H. & H. Pussyfoot Sockets (porcelain) 4/-, H. & H. Pussyfoot Sockets (bakelite) 4/6, Green Shell Insulators 4d., 6d., 9d. each, Terminals (brass) 2d. each, N.P. Terminals from 3d. each, Engraved Terminals (set of 8) 2/9, etc., etc.

### FRESH STOCKS

Fresh stocks of the following are now available: Ormonde .0005 S.L. Low Loss Condensers (plain) 12/6, with vernier 15/-, Igranite .0005 Condensers £1/15/-, Koh-I-Noor Coils from 1/6 upwards, Bias Batteries 3/3 each, Winchester, Columbia, Hellesen, and Ever Ready "B" Batteries, etc., etc.

Owing to the remarkable response from all over Queensland we have had to increase our staff in the Despatch Department to cope with the avalanche of orders by telephone, telegram and letters. We attribute this wholly to the service given by us and thank one and all for their patronage. Further copies of our Illustrated Catalogue are now available, and we want you to have one in your possession, so write us, and we will be posted free of charge.

# Wireless House

LIMITED

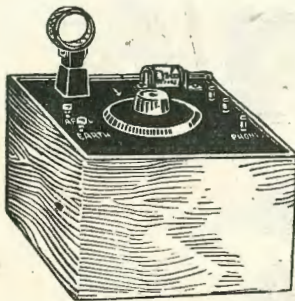
Queensland's Oldest Wireless Supply Store

**Adelaide Street** [Opposite NORMAL SCHOOL] **BRISBANE**

# Special Showing of

# GLORIOLA

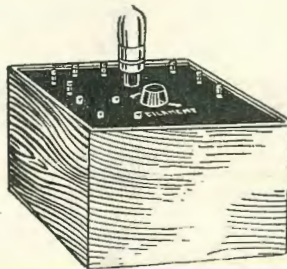
## CRYSTAL SETS AND VALVE SETS



### Crystal Set De Luxe

Complete with Headphones and Aerial Equipment . . . £3/5/-

Without Headphones and Aerial Equipment . . . . . £2

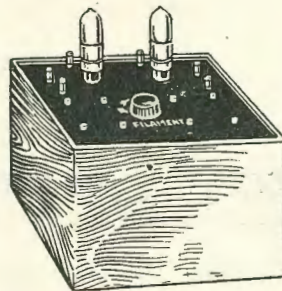


### 1 Valve Amplifier

Complete with Valve and Batteries . . . . . £4/10/-

Without Valve and Batteries . . . . . £2/2/6

Have us demonstrate these sets. See them in our window, or write us for full particulars.



### 2 Valve Amplifier

Complete with Valves & Batteries £7/10/-

Without Valves and Batteries, £3/15/-

## J. B. CHANDLER & CO.

"For Radio Service"

45 ADELAIDE STREET, BRISBANE  
(next to Allan & Stark's)

S.A.S

# Solder Your Connections

By A. V. D. HORT, B.A.

In "Modern Wireless".

For quite a number of constructors of wireless receivers and similar apparatus the word "soldering" probably conjures up visions of heat, smell, damaged ebonite panels and frayed tempers. When a receiver has reached the wiring stage, too often the task of soldering the connections is shirked in favour of the apparently simpler operation of fixing the ends of the wires under the nuts on the terminals and other parts. As a matter of fact, the forming of the loops at the ends of the wires for this method of making connections will usually take longer than soldering them. When once the knack of making soldered joints has been acquired it is much easier to secure a wire to the shank of a rather inaccessible terminal with a touch of a soldering iron than it is to place a loop of wire on the shank followed by the nut; the necessity for making sure that the nut is hard down on the wire does not tend to make the later job any easier.

## CONTACT JOINTS.

Though it is maintained by some who have claimed to speak with authority that "contact" joints, that is to say joints that are made by the pressure between a nut and the wire, are more satisfactory than soldered joints, at any rate of the kind which are generally made by amateur constructors, there is little doubt that for permanence and consistency of results from the receiver over a long period well made soldered joints provide the best means of connection. It should be emphasised however, that the essential point is that the joints should be well made. Bad joints make for imperfect and uncertain connections, and they may well offer a higher resistance to high frequency currents than carefully made contact connections.

As indicated at the beginning of this article, soldering is to some an operation to be shunned, owing mainly to an exaggerated idea of the difficulties involved. These difficulties are really imaginary, and skill in soldering can readily be acquired by anyone who is prepared to follow simple directions and to be strictly methodical. Slapdash methods of soldering may be all very well for the experienced mechanic who could do the job with his eyes shut, so to speak, but care and method are necessary in order to make a satisfactory job of the wiring of a wireless receiver.

## THE NECESSARY TOOLS.

Suppose now that we have a wireless receiver under construction. The components have been mounted on the panel, and all that lies between us and the first tests in actual reception is the fixing of the connecting wires. Certain tools will be needed. These are as follows: A soldering iron with a bit between  $\frac{1}{2}$  lb. and  $\frac{3}{4}$  lb. in weight, a small file and a pair of pliers. In addition there will be required a piece of emery paper, a stick of solder and some flux. The last two items may vary in their

composition. A convenient form of solder for the wireless constructor is made up in the form of thin tubes of solder containing a core of resin, the latter forming the flux. Alternatively the flux may be obtained separately in which case resin, fluxite or one of the other non-corrosive fluxes which are obtainable will be found satisfactory. If in any doubt about the flux to use, it will be best to try resin, since this cannot possibly do any damage to the set if any of the joints "go wrong."

## HEATING THE IRON.

If a gas ring is available, the iron may very conveniently be heated over this. To heat the iron in an ordinary coal fire, a tin should be placed in the heart of the fire and the iron put inside this; this procedure will prevent undue fouling of the iron, and will also help to prevent it from becoming too hot. While the iron is heating, the receiver itself should be prepared for soldering. The ends of all the terminal shanks are to be cleaned first, and this introduces the cardinal rule which applies to all soldering operations, namely, that everything must be made scrupulously clean and must be kept clean. If this rule is adhered to, soldering will be found a perfectly simple matter. On the other hand, if it is disregarded, the "visions" quoted earlier are likely to become facts.

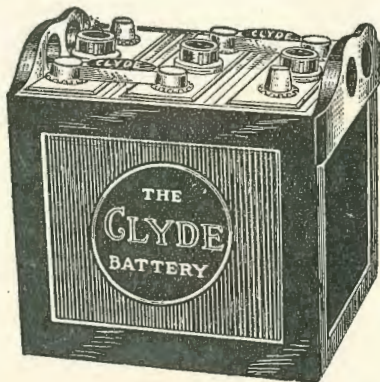
The ends of all the terminal shanks should be filed up smooth and bright with the file. This will be found better than emery paper, since the latter is liable to leave emery dust about, which is not easy to get rid of. By this time the iron should be ready. The correct temperature for the iron is most important, and it is in judging when the iron is just right that experience plays such a large part. This experience is not, however, difficult to acquire, and the best method for the beginner to adopt is that of trial and error.

## THE CORRECT HEAT.

It is important to avoid overheating the iron, as this will damage its surface and make it harder to work with. If a  $\frac{1}{2}$  lb. iron, say is being heated over a gas ring, leave it at first for two minutes. Then take it up, smear a little flux on one face at the tip, and press the end of a stick of solder on this face. Very likely the flux will smoke and burn away slowly while the application of the stick of solder will produce no result. In this case the iron should be replaced in the flame for another minute or so. When the solder melts and runs on to the iron as soon as it is touched on it, the iron is then hot enough. If the resin-cored type of solder is in use, the application of the solder to the iron will automatically supply the necessary flux, the resin running out of the solder. When this type of solder is in use the tip of the stick of solder will melt off as soon as it touches the hot iron, and the resin will burn away almost immediately. An iron not hot

# *As Permanent as Radio Itself*

---



**T**HERE is confidence in a good receiver, a set well designed and constructed of good parts and that will give faithful reproduction of local and Interstate broadcasting. But a good receiver requires a filament battery that will stand up hour after hour to the heavy demands made by a multi-valve set.

Such a battery is the CLYDE—in a class by itself. Constructed throughout on the soundest engineering principles—incorporating the very best materials—acid-proof and leak-proof—tested at each stage of manufacture by a staff of experts. These are some of the reasons why CLYDE represents the very best value in radio batteries to-day.

Behind every Clyde Battery stands the prestige and manufacturing ability of the Clyde Engineering Company Ltd., the largest and one of the oldest engineering and electrical houses in Australia. The Clyde imprint is significant of solidity and service.

Every Clyde Battery Carries a 15 Months Guarantee

*At All Dealers*

## **CLYDE RADIO BATTERY**

*Manufactured by*

**THE CLYDE ENGINEERING COMPANY LTD.**  
SYDNEY

enough may just melt the solder after it has been held in contact with it for a few moments, but the solder will look "sticky" and will not run on to the iron.

#### A FILM OF OXIDE.

A trouble which is very often experienced at first is that of getting the solder to take on the iron. The purpose of the flux is temporarily to remove the thin film of oxide which forms on the surface of the bit, and thus enable the solder to come in contact with the clean copper surface and alloy with it properly. If too much flux is applied, it defeats its own object by fouling the surface of the iron. For this reason it is no use applying the flux to the iron when the latter is cold, since it will then burn away slowly as the iron heats up and leaves a deposit which will have to be scraped off. When the iron is hot enough, the flux will burn off almost as soon as it is applied, but if the solder is touched on the iron at once, the flux will have done its work and the solder will take.

#### CURING THE EFFECTS OF OVER-HEATING.

In order to keep an iron in good condition the whole of the tip of the bit should be tinned all round, particular attention being paid to the corners in the case of a square bit. A well-tinned iron will be less liable to be damaged if it is slightly over-heated at any time, and the tinning of the corners will prevent oxidation from taking place at these points. If the iron does get fouled or covered with a hard scale so that the solder will not take on it, the simplest cure is to heat it red-hot, and plunge it into cold water. The scale will then all flake off and the faces may be brightened up with an old file preparatory to re-tinning.

#### TINNING THE TERMINAL SHANKS.

Assuming that the iron is ready and tinned, a trace of flux should now be put on the tip of each terminal shank. The stick of solder is then pressed on the face of the iron till a blob of solder has run on to it, and this face is brought to bear on the shank of the first terminal. The flux on the terminal should "fizz" off at once, and after about five seconds the iron should be removed. A small blob of solder should be adhering to the shank of the terminal. Leave this for a minute to cool, and then try and pull it off sideways from the terminal shank. If it is quite firm, the remaining terminals may be treated in the same manner. Each one should be tested before being passed as, sound. If the blob does come off from one of the terminals, the latter should be cleaned up again with the file and the whole process repeated. No attempt should be made to tin the shank of such a terminal without cleaning it again. The heat of the iron will almost certainly have burned off all the flux, and a film of oxide will have formed again which fresh flux is unlikely to remove without thorough preliminary cleaning.

#### USING RESIN-CORED SOLDER.

It should never be necessary to hold the iron in contact with a terminal for more than a few seconds. If the job is done quickly with a hot iron, there will be little chance of the heat traveling along the shank and damaging the ebonite panel. The method of tinning the terminals described above applies to the use of separate solder and flux.

When resin-cored solder is used, the operation is even simpler. The terminals are well cleaned in the same way, but no flux is applied until the iron is ready. Then the tip of the solder stick is rested on the shank of the terminal, and the tinned face of the iron is pressed down on the top of this. The solder will at once melt and run on to the shank, the correct amount of flux being automatically supplied. It is more than ever important in this case to have the iron hot enough, since when resin is used as the flux somewhat greater heat is required than with other fluxes. If the iron is too cool to make the joint, it may nevertheless melt the resin out of the solder and so clog up with too much flux the point to be tinned.

As soon as a little practice has been acquired it will be found possible to tin a dozen terminals or more without re-heating the iron. At first it will be as well to work slowly and to be sure that the iron is really hot for every point.

#### THE TINNED WIRE.

Tinned wire is most commonly used for making connections nowadays, so that the preparation of the wires which have been bent to shape for that various positions is quite an easy matter. Even with tinned wire, however, a great deal of trouble will usually be saved by giving the ends of each wire a little extra tinning. This is most easily done by running a little pool of solder on to the iron and laying the end of the wire in this, putting a very little flux on the wire if necessary.

(Over)

## Single Valve Sets — R.E.G. —

Made completely in England. Highly finished of Best Parts. Mounted in Rosewood Cabinet.

4QG on small Reproducer. Southern Stations on Phones.

Complete with R.E.G. Headphones, Mullard Valve, Batteries and Aerial Equipment, ready to install.

£10-10-0

FROM ALL DEALERS.

Wholesale from—

**EDGAR V. HUDSON**

55 CHARLOTTE STREET, BRISBANE.



**FIXING THE WIRES.**

Now when a wire is ready for attachment to one of the tinned terminals, it should be held with a pair of pliers against the shank of the terminal and the face of the iron with a good blob of solder on it brought to bear from the side on both the wire and the shank together. It is important that the iron touch both parts at the same time, as otherwise the solder will not melt properly on both parts and an imperfect joint will result. As soon as the solder on the two parts is seen to run together, the iron should be removed and great care should be taken not to move the wire until the solder has set.

Close observation of the joint will show when the solder sets, as a crinkling of its smooth surface will take place as it suddenly contracts in cooling. As soon as this is noticed, the joint is finished. The wire should be given a pull to make sure that it is really firm, the joint being remade if it breaks away.

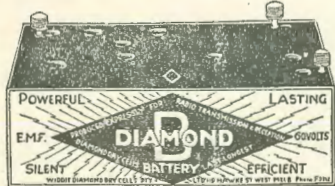
**SAVING TIME.**

A good deal of time can usually be saved in the end in soldering the connections of a wireless set if every possible point is thoroughly tinned before any attempt is made to do the actual jointing. This applies specially to such parts as soldering tags, which are usually lightly tinned already, but which are almost certain to be sufficiently oxidised to prevent the solder from running easily and taking properly. Where, as in the case of some types of

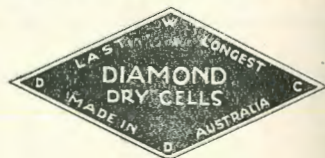
valve holders and similar components, the soldering tags are secured on short bolts and so come very close to the ebonite of the component, the tags should be removed from the bolts for tinning and their connecting wires should be soldered to them before they are replaced. This procedure will obviate the possibility of damage to the ebonite which might otherwise result from the heat of the iron transferred to it via the bolts.

**THE FINAL OPERATION.**

The final operation when the soldering of all the joints is complete, before testing the receiver, is to clean the back of the panel of all traces of flux. Paste fluxes, if left on the panel, will tend to pick up dust and so will eventually cause noises in the receiver and even considerable leakage of current. The writer has known of a case in which 1½ milliamps. were found to be passing from the H.T. battery of a receiver even when no valve was in the holder. This leakage was traced to the presence of an accumulation of flux and dust between the contacts of the valve-holder. Metallic dust in particular can, of course, be a fruitful source of trouble, and a certain amount of this will be produced in the operation of filing the terminals. A large soft brush and some methylated spirit will be found useful in cleaning. A certain amount of resin left on the terminals and other metallic parts will not be likely to give rise to trouble, as it is non-conducting and it does not tend to pick up dust to any serious extent.



**DIAMOND DRY CELLS**

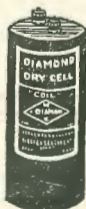


**“Diamond Batteries Make Good Sets Better”**

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**

	Battery	“Coil”	
A-	1.5 Vt.	“Coil”	2/9
	1.5	“Buzzer hamp”	3/-
	1.5	“Cwealth-type”	5/9
B-	1.5	“AVER”	5/6
	60 Vt.	Large 1yp	27/0
		10 1/2 x 7	
	45	Large Type	22/6
		10 1/2 x 7	
C-	4.5 Vt.	“Biacon Large Special”	13/6
	6.0	“Ignite”	16/6



**SUPPLIED TO**

P.M.G. Dept.	Water Board.
Q'd Railways.	Ordnance
Public Works.	Stores. etc.
Department.	

Wholesale only from:—  
**JOHN REID & NEPHEWS,**  
 CHARLOTTE STREET,  
 BRISBANE.

Manufactured by **WIDDIS DIAMOND DRY CELL PTY. LTD.** W. Melb., Vic.



## Mr. Cecil Woodland

*Newly Appointed Official Announcer at Station 4QG*

Listeners to 4QG have noticed and commented upon the marked improvement in 4QG's announcements during the past three weeks. Mr. Cecil Woodland, whose photo you see above, was recently appointed official announcer at 4QG's studio microphone and has adapted himself to his new position quickly and capably. His announcements are beautifully crisp and clear.

Mr. Woodland is not altogether a stranger at the studio of 4QG. On several occasions he has sung from this station, for he is possessed of a pleasing Baritone voice.

Mr. Woodland is himself a keen radio amateur and has been connected with the Graceville Radio Club since its inception. He states that he intends to delve into the technical side of radio with a vengeance now that his profession has taken him into the radio field.

## The Story of the Muffled Mike

Have you ever heard the story of The Muffled Mike? It's one of those tales that is shrouded in a cloak of mystery. It happened at the Brisbane Concert Band Practice Room one Thursday evening. The time was one minute to nine. The band was assembled and ready to play the first number when 4QG switched through at 9 p. m. Suddenly the door burst open and Bandsman Jones rushed in nearly tripping over his trombone as he leaped through the door. "Hurry up Jones" shouted the conductor, "we're waiting." "Right, sir—coming, sir," panted Jones as he struggled out of his overcoat. At last he freed himself, and tossing the garment over the microphone he scrambled into the ranks just in time to miss the first beat.

Nobody thought of poor old Mike as he stood hidden in the corner of the practise room. However, it didn't seem to interfere with the transmission any. The coat evidently served as a kind of filter for the music, for there were no complaints lodged concerning the transmission of the selections.

# DON'T!

## Hump Your Battery to the Charging Station—

# IF—

You are living in the South Brisbane area and adjacent Suburbs, we will call for and deliver same promptly. We charge and repair any battery.

## Phone J2350

**J. E. DYNE**

## Exide Service Station

525 Stanley Street, South Brisbane.  
Near Vulture Street.

## Roberts' Exhibition Wireless Cabinets

A well-built, finely polished Cabinet, will make all the difference to the appearance of your set.

We build Wireless Cabinets of Maple, Silky Oak, or Rosewood, to any size, and polish them in any color. The cost is very reasonable. Call and see us.

*To Those in the Country*

To facilitate packing we supply "knock-down" Cabinets, cut and polished, ready to screw together. Write us for prices.

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

# Queensland State Orchestra Concert Broadcast

*A Musical Treat for Listeners*

On Tuesday evening, May 18th, the first subscription concert of the Queensland State Orchestra under the baton of Mr. George Sampson, F.R.C.O. was broadcast from the Exhibition Hall. It proved a treat for lovers of the better class of music and the wish is expressed on every side that future concerts by this orchestra will be also broadcast.

In composition and in excellence this programme equalled those broadcast from the N. S. W. and Melbourne Conservatoriums, and it is safe to say that it came as a great surprise to listeners of other States to know that Queensland possessed such a fine body of musicians.

Formerly known as The Musical Union, this orchestra of 70 performers, under the capable leadership of Mr. Eric Hayne has been doing yeoman service for years in the establishing of a permanent orchestral society in Queensland. The fight has been an uphill one, but the enthusiasm of the conductor has fired the members to higher attainments.

Queensland is commonly discussed in the south as being musically lacking. This concert should prove to them that so far as orchestral societies are concerned our State has in The State and Municipal Orchestra a combination equal to anything in the Commonwealth.

## WHERE FORTUNES WAIT

Inventions That are Needed in the Field of Radio

### A Tube-filament Renewer.

1.—A device that will enable the radio fan to renew, without great expense, the burned-out filament of his vacuum tubes.

### A Self-tuning Receiver.

2.—A complete receiving set with an automatic dial device, similar to the automatic telephone, that will tune in electrically the broadcasting stations by merely dialing the station call letters.

### A Filament Current Supply from the Lighting Circuit.

3.—A really satisfactory method for obtaining proper filament supply for vacuum tube receivers that are used as a source of power to the alternating current lighting lines, and that can be attached to any receiving set without change in the receiver design.

### A Simple Static Eliminator.

4.—A device that can be used in conjunction with a receiving set that would eliminate static and yet not increase the number of controls necessary for tuning in the signal.

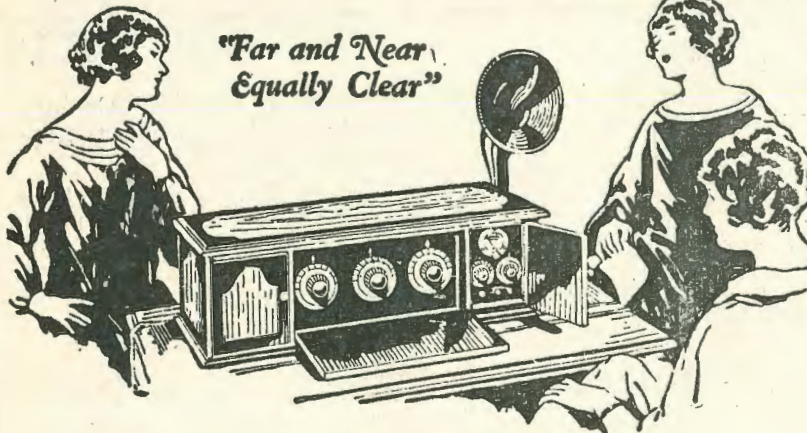
### Vacuum Tubes Without Filaments for Amplification.

5.—A new principle for obtaining a pure electron stream in a vacuum tube that will be modulated by an externally applied current, without the use of a filament or batteries.

### A Solution to Super-regeneration.

6.—A circuit modification of the Armstrong super-regenerator which will obtain full benefit of super-regeneration without critical operation and without distortion.—“Popular Radio.”

*Harringtons* <sup>INC.</sup>



*"Far and Near,  
Equally Clear"*

## GILFILLAN Neutrodyne

Their construction assures simple, dependable operation. Meet all requirements of clear Radio reception with super-sensitive selectivity, rich full tone, and unlimited range.

They have a two-scale voltmeter for testing batteries and Lo-loss condensers of special design. Space is provided in the Cabinet for "B" batteries. The Cabinet is made of selected American walnut, with handsome two-tone finish.

Easy Terms on Application

*Harringtons Ltd*

Radio and Photographic Warehouse  
QUEEN ST., BRISBANE

Branches in all states and N.Z. Representatives everywhere

### PRICES

Model G.N. 1. (5 Valve) ...	£69/-/-
Model G.N. 2. (5 Valve) ...	£59/17/9
Model G.N. 3. (4 Valve) ...	£34/5/-



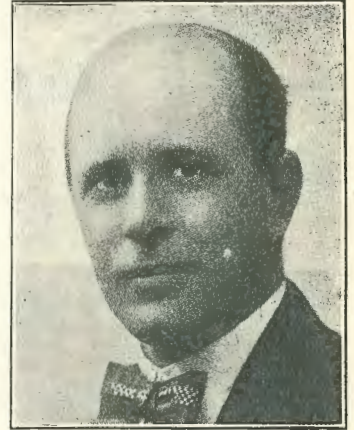
# People in 4QG's Programmes



MR. TED ENGLAND.  
(Baritone).



MISS LOTTIE RICHTER,  
(Soprano).



MR. ERIC HAYNE,  
(Violinist).



MRS. CHAS. WILLEY.  
(Contralto).

These five artists, in conjunction with the Savoy Orchestra, gave an enjoyable "classical night" from 4QG on Wednesday, 19th May. The items for the most part were excerpts from famous works. The solo numbers were rendered with great artistry, and the quartettes were also nicely sung. Miss Richter arranged the entertainment.



MR. W. CRISP,  
(Tenor).

Mr. William Blogg, whose visit in 1924 will be remembered by many in the radio industry, has just returned to this country from England.

Since his last visit to Australia, Mr. Blogg has made journeys to South Africa and India, on behalf of Messrs. Alfred Graham and Co., London, makers of the world-famous Amplion loud speaker.

Grahams have now formed associated companies in most countries for the purpose of protecting their interests, and rendering to their customers the same

invaluable service as prevails in England and America, where the name "AMPLION" has become a house-hold word.

Mr. Blogg's future activities will mainly be devoted to organising the Australasian business in conjunction with the company's sole distributor, Amalgamated Wireless (Australasia) Limited, and anyone wishing to have details of the AMPLION service may obtain same by application to his business address, 9 Loftus Street, Sydney, N.S.W.

The GRODAN  
NEW  
**Hinged Spider Former**

1/9

6<sup>D</sup>

1/3

9<sup>D</sup> PAIR

Easy to wind. Fits all standard sockets.  
Cheapest and best Inductance Device in  
the trade.

The Grodan Folding  
**LOOP  
AERIAL**

To ensure best results Comp the Ether  
with a Grodan Loop. Takes up no more  
room than an umbrella.

The GRODAN  
**Adjusto-Former**  
For Neutrodyne Sets.....

Set of  
3 Adjusto Formers

Paper Tubes  
24/6

Celluloid Tubes 27/6

IMPROVED  
TAPPING

Head Phone  
Loud Speaker  
Adapter

7/6  
each

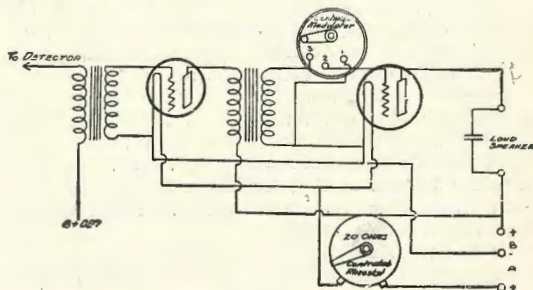
# Winter 1926 Sees New Improved Radio Goods

Messrs. United Distributors Ltd. have just opened up the new "CENTRALAB" line of which they are sole Australian representatives. Possibly the most interesting are the radiohm and the modulator. These devices are particularly adapted to the new circuits now so much in favour.

The modulator is very well adapted to making old sets up to date by using it as a volume control. This instrument is a non-inductive variable high resistance with three terminals, the slider connecting to the centre terminal, and varying from zero at either outer terminal to maximum resistance. It gives stepless and noiseless control throughout the life of the set. All working parts are enclosed and are unaffected by dust or moisture. The total resistance is 500,000 ohms, smoothly variable from zero.

When connected in an audio amplifying circuit as shown by the accompanying diagrams, the modulator gives noiseless adjustment to any desired tone volume from a whisper to maximum loudness, with improved quality of reproduction.

are connected across the secondary of the second stage audio transformer.



The Centralab method of volume control is essential to an impedance-coupled amplifier, because the old method of switching stages by means of jacks leads to destructive induced voltages in the highly inductive coupling coils.

For the same reason, the modulator is essential where any audio transformer is used with high primary impedance, such as the high quality, low ratio audio transformers becoming more and more popular. It prevents transformer burn-outs, and gives the finest possible adjustment of tone and volume.

Secondly, it is widely used in connection with any type of impedance coupled audio amplifiers, and thirdly, as an oscillation control in quite a few of the up to date sets.

E. G. Beard, chief engineer of United Distributors Ltd., is using both the Centralab Modulator and Radiohm in the new Capsidyne Circuit, which is employed solely in the United Distributors Ltd. new season's radio receivers.

The radiohm can be used wherever an adjustable high resistance is needed in the radio circuit. Since it is non-inductive and smoothly variable from zero to maximum, it works particularly well in the plate circuit of tuned radio frequency amplifiers as an oscillation control, and is being used for that purpose by many manufacturers.

Figure 3 is the popular tuned radio frequency circuit with two radio frequency amplifier tubes and

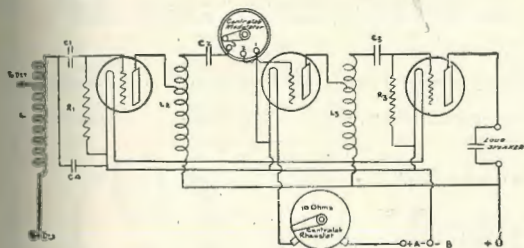
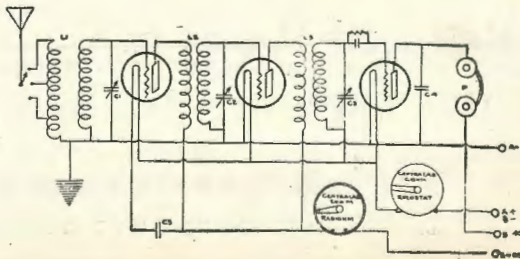


Figure 1 shows the modulator applied to an impedance or resistance coupled audio amplifier. This is the latest improvement in high quality audio amplification. Three stages, coupled as shown, gives slightly greater volume than two transformer-coupled stages, with superior tone quality. The advantage of choke coupling over resistance coupling is greater volume per tube without requiring especially high "B" battery voltage.

To attach the Centralab Modulator connect centre terminal, No. 2, to the grid of the second tube. Terminal No. 1 connects to "A" negative, and terminal No. 3 to the blocking condenser, C-2. Condensers C-1, C-2, and C-3 should be half to one mfd., while the condenser, C-4, should be approximately .001 mfd. R-1 and R-3 are half megohm grid leaks. The iron core coils, L-1, L-2, and L-3 should have the highest possible inductance. The three 201A type tubes can be controlled by a single 10 ohm Centralab Rheostat.

Figure 2 shows the Centralab Modulator applied to the customary transformer-coupled audio amplifier. The centre terminal, No. 2 connects to the grid of the second audio tube, while terminals Nos. 1 and 3



the detector. Either audio frequency amplification circuit illustrated for the Centralab Modulator can be added.

The No. 200-M Radiohm is recommended. Connect one terminal to "B" positive, and the other terminal to the plate return of the primary radio frequency transformer coil. This terminal is also connected to the bypass condenser, C-5.

Coils L-1, L-2, and L-3 are the antenna inductance, and the two air core radio frequency transformer coils. Any good air core, tuned R.F. coils can be used, and they may be wound on tubes or spider web fashion, as desired. Variable condensers C-1, C-2, and C-3 are connected across the secondaries, and have a maximum capacity of approximately .00035 mfd. Condenser C-4 is .001 or .002 mfd. capacity, and condenser C-5 1/2 to 1 mfd. This bypass condenser is important. All three tubes can be controlled by a 6 ohm Centralab rheostat, or this rheostat can be used to control all five tubes where an audio amplifier is added.

The Centralab Radiohm is used in the Andrew's Deresnedyne and many other factory made radio receivers. It can be easily substituted for one of the rheostats on old or current models of Neutrodyne or tuned radio frequency sets, and gives a non-critical oscillation control that greatly improves reception. These circuits are fundamentally the same as Fig. 1, so that the necessary wiring changes are few. Be sure that the bypass condenser, C-5, is used as shown.

Centralab Radiohm can also be used to control oscillation in regenerative circuits of various types, including the Superheterodyne, or can be used as a

variable leak in the audio circuit to control volume. The modulator, however, is recommended for the latter purposes.

Amateurs are advised to look for a variety of new circuits all of which bear the prestige of leading radio engineers and which will be published in the near future.



**A RED CROSS  
in this square**

denotes that your subscription  
expires with **THIS ISSUE**

Send 6/6 (P.N. or Cheque) to-day to  
**BOX 1095N, G.P.O., BRISBANE**



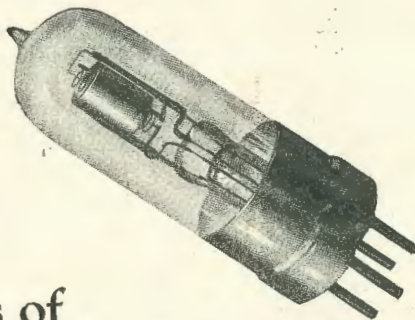
*Famous Symbols*  
**The World's First Valve**  
Was Made by **EDISWAN**



**TYPE R**

Filament Voltage, 4.  
Filament Amp., .75.  
Plate Voltage, 50-100.

If you are not using Ediswan Valves already buy now and enjoy better reception.



**OTHER TYPES**

- ARDE . . . . . 12/6
- AR.06 Dull Emitter . . . . . 13/6
- PV5 Dull Emitter 18/6
- PV6 Dull Emitter 18/6
- PV8 Dull Emitter 18/6

**Reduced Prices of  
the Famous "R" and "AR" Valves 5/- each**

*Stocked in English and American Caps*

**OBTAINABLE FROM ALL WIRELESS DEALERS**

*Wholesale—***THE EDISON SWAN ELECTRIC CO. LTD., 156 Creek Street, Brisbane**

# CLUB ACTIVITIES

## Wireless Institute of Australia (Queensland Division)

The annual meeting of this division is to be held on the 28th of May just as this paper goes to press. The new office holders will be given in next month's issue.

Once again the Queensland Division has a "moving day" and has to go to another room. By courtesy of the Brisbane Newspaper Company they are occupying a portion of the accommodation allotted to the process department. The late rooms of the institute are now occupied by tenants. The greatest drain on the financial resources of a body such as this is rent and power and the division appreciates very much the goodness of the "Courier" in providing these for the Institute. The necessity of changing over to another room has been the cause of the interference with the Morse instruction, but it is hoped to be on the move again shortly. From 22nd May to 6th June the Federal Executive is conducting special Trans-Pacific tests in conjunction with the A.R.R.L. Between these two dates the tests for the institute "A" grade station certificate will be held.

On June 4th and 5th tests with the States on 40 and 20 meters will be held. It is hoped that Aus-

tralian stations will fill the ether with signals. Any receiving station wishing to participate will be provided with a schedule on application to Federal Secy. On June 2nd, from 6 p.m. to 10 p.m. special tests down to 5 meters are allowed for. Here's a chance for the boys now? The address of the Federal Executive is Box 3120, G.P.O. Sydney, and transmitters who have not received the circulars about these tests are invited to write at once or radio 2WI.

The question of following the example of Victoria and building a "Shack" on freehold property is again receiving attention. A fine example of what can be done by a club is given in the latest issue of "Q.S.T." just to hand, where the Modesto Radio Club House is shown, a cement structure by the way which was built by the efforts of the boys in selling "hot dawgs" at the local show. When are we going to get sufficient confidence in our future to follow suit. We have the gear now let's work for somewhere to put it. Letters addressed to the Division C/- Courier, will find the right place. Membership forms are free for the asking and the subscription is one guinea (21/-) per year and half a crown entrance fee. Let's hear from YOU.

## Graceville District Radio Club

A marked improvement in the attendance and a keener spirit of enthusiasm were the most outstanding features of the monthly meeting of the above Club held in the Graceville Methodist Hall on Friday evening the 7th May. There was an attendance of 19 members—the meeting being presided over by the President, Mr. Pledge.

The Club, in conjunction, with other Radio Circles, at present engaged in an effort to have the wavelengths of the various broadcast stations rearranged so as to overcome the present crowding on such a narrow waveband.

As previously mentioned it has been decided to hold a Radio Dance. This novel function will be held in the Chelmer School of Arts on Tuesday evening 8th June. Tickets are available from the Secretary or from any of the members of the Club.

During the evening there was an exhibition of wave traps constructed by Dr. H. E. Mason and Mr. H. and crystal sets by Messrs. Pledge, de Maide and Laws all of which were of 1st class design and which were received with the greatest interest.

Since the issue of our last monthly report, requests have been received from several country listeners asking for particulars of the crystal set as exhibited by Mr. Pledge at our last meeting, and it is gratifying to know that generous assistance is at all times afforded to those desirous of attaining greater results than those at present being realized, and so fulfilling the aims of the Club.

A further increase in the number of aeriols in the district is noticeable, and to those possessors of radio sets who are not as yet members of our society we extend a hearty invitation.

The necessity of joining up cannot be too fully stressed, for it is only through the close and properly organised co-operation of radio enthusiasts, can beneficial results of the highest order be attained.

The annual fee is 7/6—the only qualification for membership being the production of a Radio License.

Those desirous of obtaining further information are requested to communicate with the Hon. Secretary, Mr. Keeping, Ettie Street, Sherwood.



Gives you more programmes



# The REAL Long Distance Valve

DESIGNED specially for powerful long-distance radio reception. Gives you the means to pick up those weak and elusive signals and amplify them to reality.

Secure the valves that are associated with all the great trans-world records.

**MULLARD** Double Red Ring VALVES

Type D.3 for 2-volt accumulator EACH 13/6 Type D.06 for 2 or 3 dry cells 13/6  
or 4-volt accumulator EACH 13/6

GET ONE FROM YOUR RADIO DEALER

# Mullard

## THE MASTER VALVE

(A.R.K.S. 1)

Mullard Valves can be obtained from All Radio and Electrical Dealers

Advertisement of the Mullard Wireless Service Co. Ltd., Balham, London S.W. 12, England

## South Brisbane Radio Club

(Welcome Back!—Editor.)

The first Annual General Meeting of the above club was held on the thirteenth of April, 1926. The accounts showed a very successful year, the club having about £4 to its credit and during the year has spent considerable sums on wireless gear.

The President (Mr. Myers) in his address gave a brief survey of the club's activities and progress since its inception just twelve months ago. During the year eight (8) social functions were held, all of which proved both social and financial successes.

On four occasions "Smokos" were held for members, which, like the other functions, were social successes, but as some members have large appetites, they could hardly be said to be financial successes. Indeed after the last Smoko the Treasurer was seen to be on the verge of tears as large quantities of nourishment disappeared.

An outstanding feature of last year's syllabus was Sale and Exchange night when a large quantity of material changed hands, with the aid of our Auctioneer, Mr. Young. This is the only occasion where a man of Mr. Young's ability (I nearly said nationality) has given his services absolutely free.

The syllabus of lectures given during the year were of a very high standard, and the thanks of members are due to lecturers for their fine efforts, and while on the subject the club suffered a great loss when Mr. Thompson (2HE) left to take a position in Toowoomba. Mr. Thompson's lectures were always looked forward to eagerly by members who gained much knowledge therefrom. The club held two debates during the year and were victorious on both occasions.

Through the courtesy of Mr. Robinson, Director of Station 4QG, the club was given the opportunity of an inspection of temporary 4QG. Members availed themselves of this generous offer and much information was thus gained.

On the occasions that the club was given the honour of supplying the full programme for 4QG, the

South Brisbane Radio Orchestra made itself widely known to Broadcast listeners.

We desire to once again express to Mr. Robinson and Staff of 4QG our appreciation of the dance music supplied for several of our social functions, which went a long way towards making them the huge successes they undoubtedly were.

Our visitors during the year under review included members of Booval Radio Club, Leichhardt and District Club (N. S. W.) Wooloowin Radio Club and also Mr. W. Best (2ER).

The Morse class under the directorship of Mr. Young has made steady progress and several members are now very proficient. Great thanks are due to the Technical Committee for their untiring efforts in constructing apparatus for the club.

The election of officers for the ensuing twelve months resulted in Mr. W. Young being elected as President. Mr. Young in his captivating brogue returned thanks for his appointment, and inquired if the photo of the bewitching lady on Ex-President Myers' table went with the office. Mr. Myers was elected Vice-President, Mr. C. E. McCarthy Secretary, and Mr. W. R. Gilbert has been retained to extract subscriptions from members and otherwise look after the club's finances.

Through the courtesy of Member H. Tweddell, the club now meets at his residence at Amelia Street, Buranda, where several members have erected a room for housing the club's property, and we are now settling down to work in earnest.

We regret to report the probable loss of our energetic Secretary who seems to have but little time for radio since the fair sex have fallen under his spell, but hope he will soon tire of his new toy and return to the South Brisbane Radio Club.

Anyone desirous of joining is invited to communicate with the Secretary, care of H. Tweddell, Amelia Street, Buranda.

## Eastern Suburbs Radio Club

On Wednesday, 19th May, a meeting of radio enthusiasts was held at the residence of Dr. Rae, King street, East Brisbane, with the object of forming a radio club in the district. There was a fair roll-up and much preliminary work was attended to. It was decided to term the club "The Eastern Suburbs Radio Club" and to hold meetings

every Wednesday evening at Dr. Rae's residence. Any reader of the district who is interested and would like to come along is heartily invited to do so. Further particulars may be obtained from Mr. A. E. Newnham Radio Dealer, Logan Road Five-ways, S. B., 'Phone J.4379.



### Wireless Aerials

Supplied, Delivered and Erected.  
Good Timber, — Solid Foundations. Enquiries Invited.

**G. H. BUSBY**

Lily Street, Stones Corner,  
South Brisbane





### UNCLE BEN and MABEL SUNSHINE, *The Children's Favourites at 4QG*

A bright and cheery personality in the form of "Uncle Ben" has made a most successful appearance at 4QG's Saturday evening bedtime story session.

That he has quickly endeared himself to the hearts of the kiddies is demonstrated in his bulky mail which daily arrives at Station 4QG bearing postmarks of towns in all parts of Australia and New Zealand.

"Uncle Ben" is capably assisted by a vivacious little lady, Miss Mabel Sunshine, and between them,

these two folk provide capital enjoyment for a vast Australian-wide audience of children—and grown-ups.

The attractiveness of this Saturday night session lies in the originality of the items broadcast, bright music, sprinkled with a good seasoning of humour. "Uncle Ben" has a winning way with the children and it is plainly evident that his weekly appearance is eagerly awaited.

Our photo depicts Uncle Ben about to administer his "Saturday-night Tonic" to the children.

# Uncle Ben's Corner

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

How do you do little children? How do you do? Uncle Ben is not singing this to you tonight from Station 4QG., he is just writing it to you. But at the same time he is really just as pleased to write and ask you how you all are as he is pleased to talk to you over the wireless on a Saturday night.

Oh! my word, I nearly forgot to say that Mabel Sunshine is with me and she says I have to write and say "How do you do" too.

Well sweethearts, this is the first time that Uncle Ben has written for this corner in the "Queensland Radio News" and really, he hardly knows just what to say. It is so much easier to go up to Station 4QG and talk to all the little ones than it is to write to them. You see Uncle Ben when he is talking over the wireless, knows that all the little children are listening in to him, and he just imagines that he is with them all and is having a real fine time with them. Of course he doesn't only imagine that he is having a real good time, because he really is having a good time—now isn't he?

I can tell you all that Uncle Ben is the most pleased man in the whole of Australia when Saturday night comes and he is able to have his little talk with the children.

All the week Uncle Ben looks forward to Saturday. And oh my word, what a long, long time it seems between one Saturday night and another. It is really too long and I think Uncle Ben will have to go to 4QG soon and see if he can come along just for a tiny minute some other night just to say that he is thinking of all the little children.

Oh, and before I forget what a job Uncle Ben has had this week mending his trousers that that dog tore the other Saturday night. It was too bad of the dog to bite him, but I think it was really an accident. I don't think the pup knew that he was biting Uncle Ben. I think he thought that he was biting one of those horrid men from Station 4QG, who rushed into the studio and tried to tell the bedtime stories before Uncle Ben arrived. You all heard them of course, and I am sure you were glad when Mabel Sunshine brought the dog in and made them all clear out of the place.

I think Uncle Ben had better make sure that he gets into the studio very much earlier the next time he has the stories to tell so that the others cannot get in before him.

Now Uncle Ben likes to get a lot of letters from children who hear him over the wireless, but he would also like to get a lot of letters from little ones who read his corner in the "Queensland Radio News."

Now don't forget children. Write to Uncle Ben's corner and address your letters to Uncle Ben c/o "Queensland Radio News," Brisbane.

Cheerio until next month, when I hope to have some interesting little competitions prepared for you.

Yours fondly, **UNCLE BEN.**

P. S.—Uncle Ben loves photographs—so don't forget to send yours along. Thank you, children.



Two of Uncle Ben's Little Friends

WINNIE SEFTON,  
of Wilston.

MYRA TINGLE,  
of Annerley.

These are only two of the dozens of beautiful photos Uncle Ben has received from children all over Australia.

Don't these two girlies look sweet? Winnie looks as if she were going to a tea party—doesn't she? She's such a bonny little girl, and I'll bet her daddy and mummy think the world of her.

My word! look at Myra's playmates. SHE should never be lonely with her great big teddy bear, a sleeping doll, and a beautiful little doggie. Doesn't he beg nice? I suppose Myra had to give him a big lump of sugar for being so good.

## ABOUT OUR PHOTOGRAPH.

Elsewhere in this issue you will see a photograph of Mabel and Uncle Ben. If you haven't already got one you could cut it out and put it up on the wall near the radio set.

Such a lot of little children were disappointed at not receiving one of the 1000 photos we promised to send to those who wrote for them, so I persuaded the Editor to print the photo in this issue so that these children would get their picture too.

## SONG COMPETITION.

Two 10/- Prizes for Boy and Girl.

At the time of going to press quite a lot of entries have been received for the "How-do-you-do" Song Competition. Don't forget, it closes on June 6th, so send along your verses and you may win one of the prizes. The Editor of the "Queensland Radio News" has kindly offered 10/- for the best verse sent in by a girl and 10/- for the best boy's verse. The two winners will also have their photographs published on this page in the next issue.

Listen to us any Saturday night and you will hear the rhyme of the verses—it is really so easy!

# The Best Book on Wireless Yet!

25 Chapters,  
12 Illustrations,  
and  
60 Diagrams  
of Tested Sets.

## "WIRELESS"

by

**J. W. ROBINSON**  
(Director, Station 4QG, Brisbane)

and

**G. WILLIAMS**  
(Instructor, Marconi School of Wireless, Sydney)

No other Book  
is so lucidly  
written and  
thoroughly  
illustrated.

Price Only **3/6** { *Post Free*  
4/- }

*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, Woolowin Radio Club.  
Chairman, All Clubs' Council.

*Sole Wholesale Distributors*

**A. McLEOD**

**101 ELIZABETH STREET, BRISBANE**

McLeod's are always up to date with the newest books and diagrams on radio. When there is something you want to know, come and ask us where to find it.

Single Copies obtainable from  
All Bookstores and Radio  
Dealers or from The Read  
Press Ltd. Adelaide St., Brisbane

*Order Your Copy To-day!*

# The Evolution of the Wireless Antenna

## Various Types of Aerials Used Since the Discovery of Wireless

The use of the ether for long-distance signalling dates from the time, now thirty years ago, when Marconi first conceived the idea of the upright aerial. Eight years before, in 1888, Hertz had succeeded in generating high-frequency ether waves by utilising an "open oscillator," consisting of two short rods separated by a spark-gap, but as the distance over which such waves could be detected was only a few metres, the Hertzian experiments were of no practical value outside the laboratory.

By increasing the length of the Hertzian oscillator, and making it upright, providing a "capacity area" or plate at the top end of the upper wire, and connecting the lower wire to earth so that the latter formed a counterpoise capacity symmetrical with the upper plate, Marconi first made wireless communication a commercial proposition.

### A "Lightning" Recorder.

Strangely enough, a similar type of earthed aerial had been employed a few months before Marconi by Professor Popoff in St. Petersburg, for the purpose of receiving and recording the effects of lightning and other electrical disturbances in the atmosphere.

Popoff does not appear, however, to have realised the possibility of using his aerial arrangement as a means for receiving Morse or similar messages from a distance. Still less did he contemplate the use of his upright wire for the transmission of such signals.

### The Aerial as a "Distance Getter."

Although the step made by Marconi may now appear to be merely a simple modification of the original Hertzian oscillator, it was in fact of fundamental importance from the practical point of view, as it extended the range of reception from a few metres to several, then hundreds, and finally thousands of miles.

The advantage of the upright aerial, when used as a transmitter, is due partly to its increased capacity, which enables it to carry a heavier current, and, therefore, to transfer more energy into the form of ether waves, and partly to its height and relation to the ground, which facilitate the aerial formation and subsequent propagation of the ether waves over the surface of the earth.

### Tuning.

The year after Marconi had been granted the master patent for his transmitting aerial, Lodge contributed another apparently simple, yet vitally important factor, namely, that of adding a loading inductance so as to tune the whole aerial system and thus transmit waves of a definite frequency or wavelength. This at once introduced the idea of selectivity whereby several messages could be sent simultaneously without mutual interference.

### Inverted-Cone Aerials.

The original form of straightwire aerial was either slung from a single upright mast, or held up by means of kites or balloons.

One of the earliest practical forms of aerial, as used for Transatlantic signalling, consisted of about seventy antennae wires strung from the four sides of a square framework supported at each corner by wooden lattice towers. All the antennae wires were brought down to a converging point situated just above the power house, so that the whole network formed a kind of inverted cone.

### The Umbrella Type.

In the early umbrella aerial, still widely used, the arrangement is practically the reverse of that described above. A central tower forms the principal support of the whole network, the separate antennae stopping outwards and downwards to a supporting fringe of insulated guy ropes. The general effect resembles that of an open umbrella or conical network, with the apex pointing upwards.

### First Directional Aerial.

In 1906 Marconi discovered that, if the aerial network is arranged in the form of an inverted L, the upper horizontal portion being at least four or five times longer than the vertical height, a pronounced directional effect is obtained, the maximum transmission taking place in the plane of the upper limb and in the opposite direction to that in which it is pointing.

The same directional effect is also obtained in the case of reception, the inverted L aerial giving maximum signal strength when the signals come in along the line of the horizontal network, but so as to reach the upright limb first.

### Frame or Loop Oscillators.

Directional effects are found to be more pronounced in the case of the loop or closed type aerial than in any of the so-called open types previously mentioned. In the frame or loop aerial the electric oscillations take place between the two plates of a single condenser, no part of the system being earthed.

One result of this is that the electric charges built up on the two plates of the same condenser are so closely related that they almost counterbalance each other, and the main external effect becomes magnetic rather than electric.

### Open and Closed Aerials.

In the open aerial the effective capacity exists between the upper or high-potential part of the aerial network and the earth, so that the electric charge is widely separated and the lines of electric force are predominant. Following the aerial current, closed rings of magnetic force are created along the length of the wire, supplementing the lines of electric force

from the upper or high-potential end across the air dielectric to the ground.

On the other hand, in a closed or frame aerial the magnetic flux spreads through the centre of the area enclosed by the windings, and is accompanied by rings of electric force at right angles. In short, it may be said that the magnetic and electrostatic fields of force change places and values in the two different types of aerial.

#### Short-wave Transmission.

For ordinary wavelengths, the loop aerial is, of course, a poor radiator of electro-magnetic energy, and for this reason is seldom used for transmission.

At the same time it is interesting to note that, for the higher frequencies, the radiation efficiency of the frame increases more rapidly than that of the ordinary open aerial, so that there may be distinct possibilities for the frame aerial in this direction, particularly as the use of ultra-short wavelengths is coming more and more into favour.

#### Directional Frame Receivers.

In reception the frame aerial owes its directional properties to the fact that it is affected almost solely by the magnetic component of the incoming signal wave, to the exclusion of the electrostatic component. Maximum reception is obtained when the magnetic flux of the incoming signal waves threads through the coil windings at right angles to the plane of the loop.

In the case of a signal wave travelling near the earth's surface, the magnetic component is always at right angles to the direction of the wave front, and more or less parallel to the ground. It follows that the plane of the windings during maximum reception will coincide with the forward motion of the signal wave, i.e., the frame will be pointing towards the source of transmission.

#### Bellini-Tosi Direction-finder.

Perhaps the best-known form of directional aerial is that due to Bellini and Tosi, in which the energy received by one or more closed loops is transferred through an inductive coupling to a movable search-coil or radiogoniometer, the position of which (when adjusted to maximum signal strength) indicates the direction of the incoming signals.

A similar arrangement can be used for directional transmission by coupling the movable search coil to a high-frequency generator.

#### Double-Coil Aerials.

A modification of the original Bellini-Tosi aerial, in which two loop windings are mounted at right angles to each other, both being rotatable about a central pivot, was widely used during the war for direction-finding, particularly on aeroplanes, where the incessant roar from the engines made it impossible to determine direction by the minimum method.

It should, perhaps, be explained that the minimum method is based on the fact that the strength of the signals falls to zero when the plane of the coil is at right angles to the direction of the incoming signals.

In the double-coil or Robinson method, the main winding is set to the maximum position, and the setting is rendered more accurate than usual by switching the second or auxiliary windings alternatively into series with, or opposition to, the first coil. When the received signals remain at constant strength for both positions of the reversing switch, the main coil is pointing directly towards the trans-

mitter and is picking up maximum energy, whilst the auxiliary windings, at right angles thereto, are obviously picking up no energy, since they make no difference to signal strength.

#### Open and Closed Combinations.

Various ingenious combinations of loop or frame and elevated or open aerials are sometimes used for special purposes. For instance, it is possible to eliminate the so-called 180 degrees ambiguity by suitably combining the energy flowing in the closed loop with that flowing in an earth connection taken from the closed loop to the ground.

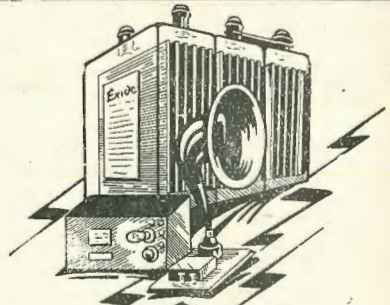
Dr. Hoyt Taylor has recently designed a similar combination for the purpose of eliminating atmospheric disturbances. The effect of the impact of a static upon a frame aerial is different to its effect upon an elevated aerial. By suitably balancing the resultant of a mixture of signals and atmospheric received both upon a frame and an elevated aerial, it is possible to balance out the atmospheric whilst retaining the signal component free from any disturbance.

#### The Weagant Aerial.

The action of the Weagant aerial or X-stopper is similarly based upon the different effects of static when received upon a loop aerial and upon an open or elevated wire network. The different "pick-ups" from the two types of aerial are counter-balanced before being fed to a valve receiver, and the desired signal is thus separated out from the masking static.

#### Underground.

The use of a long horizontal wire buried a few feet underground has been proposed both by Dr. Lee de



**Exide**

WIRELESS BATTERIES

For longer life and better service,  
Instal an

**"Exide"**

WIRELESS BATTERY.

Obtainable from all leading Radio  
Dealers.

**EXIDE BATTERY SERVICE**  
**[Q.] LIMITED**

QUEEN ST., PETRIE BIGHT, BRISBANE.

S.A.S.

Forest and by Professor Rogers as a remedy for interference caused by atmospherics. This type of aerial is more particularly suitable for use in Australia and in other tropical countries where the effect of "static" makes reception upon an ordinary aerial practically impossible for several hours each day.

**The Beverage Type.**

A later development is that known as the Beverage aerial, which consists of a horizontal wire supported a few feet above ground and extending for a distance of several miles. In this case the effect of the signal wave is twofold.

In the first place it induces oscillations in the aerial in the ordinary way, and sets up a stationary wave system along the length of the aerial.

In the second place the residual signal wave continues to travel in the ether, along the length of the wire, and so feeds additional energy into the wire at a rate which varies from point to point.

The ordinary induced oscillations and the external ether vibrations thus combine to set up a kind of beat effect, creating a series of current and voltage loops and nodes along the length of the aerial.

By connecting the aerial direct to the receiver at selected tapping points, a pronounced directional effect is secured, and interfering atmospherics can be cut out. In addition, it is also possible to receive several messages simultaneously on varying wavelengths by tapping the same aerial at different points.

**Beam Aerials.**

Another recent type of aerial is that developed by Franklin and Marconi for use with the so-called beam system of transmission. Here the principal feature is the use of a bank or network of wires placed behind the main oscillating aerial so as to act as a reflecting or focussing surface, which cuts off any back-effect and concentrates the forward radiation into a more or less sharply defined beam.

**Queensland Radio News Concert Postponed**

In our last issue we announced that we would broadcast our next concert from the Albert Hall on June 18th, when the entertainment would take the form of a Broadcasting Demonstration. Since, however, it has been found that owing to heavy pressure, Mr. Erich John and some of our leading artists will be unable to spare the necessary time for rehearsals. It has now been definitely decided to hold the concert in the Albert Hall on Friday, July 30th, when it is felt that many of our readers and listeners will avail themselves of the opportunity to be present.

**KTAB RECEPTION.**

The reception of KTAB, a Californian Station which broadcasted a special transmission for Australia on May 21st, was generally poor. 4CM states that he is in receipt of several reports from Brisbane, Redcliffe, Cooroy and Southport, but none of them could clearly receive the call sign. In our opinion KTAB was a little ambitious to attempt to bridge the Pacific with a broadcast programme using only 1000 watts.

*Don't be  
in the  
Dark!*



When you ask a few friends over to hear the Radio, naturally you—and they too—want to know what's on the programme. Don't pass round a newspaper. Buy

**THE  
BROADCAST  
BULLETIN**

which has 4QG's, 2BL's, and 3LO's weekly programmes printed in a compact little booklet and contains other matter of interest besides—including artists' photographs, etc.

**Price 2d. Copy**  
11/6 12 Months [Posted]  
6/- 6 Months [Posted]

You'll find use for the "Bulletin" every night in the week—for you have the choice of three programmes at your finger-tips. SEND A POSTAL NOTE TODAY—you'll not regret it.

The  
**"Broadcast Bulletin"**

c/o "The Queensland Radio News"  
Box 1095 N, G.P.O., BRISBANE

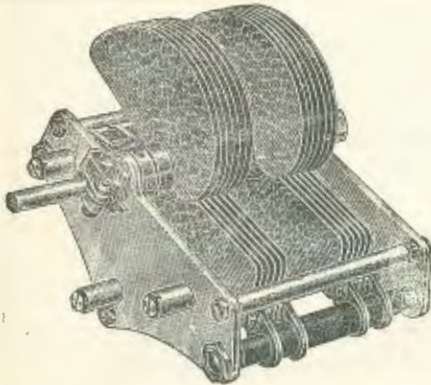
*Obtainable at all Radio  
Stores and Bookstores.*





# FAMED THE WORLD OVER

*For Quality, Tone and Dependability*



The IGRANIC Low Loss Dual Variable Condenser. Similar in design to the standard Igranitic Variable Condenser, it comprises two sections which are accurately matched. Indispensable for tuning two oscillatory circuits simultaneously. Complete with 4 inch Bakelite Knob and Dial

## IGRANIC

We have recently landed a complete range of additions to the famous Igranitic components, and the Dual Variable Condenser is a typical specimen.

The most interesting, however, are the Igranitic Supersonic Heterodyne Outfits, which have created a tremendous impression. The first shipment was instantly sold, and orders for the next, shortly to arrive, will be executed in rotation.

## BROWN

There are now EIGHT models from which to choose, and one of the new types, the Cabinet is illustrated. Prices range from two pounds to twenty guineas, and there is a model to suit every pocket.

At the back of this name stands an organisation rich in the experience resulting from many years devoted to the production of Headphones and Loud Speakers. They are unexcelled for tonal purity and volume.

## OLDHAM

We have been appointed sole agents for the Oldham (Special Activation Process) Battery, and you should investigate its unique merits before investing in an accumulator. Due to the patented method of construction, the plates are rendered active right through, and not merely on the surface as in most batteries. The charge is obviously held much longer with consequent large saving in charging costs.



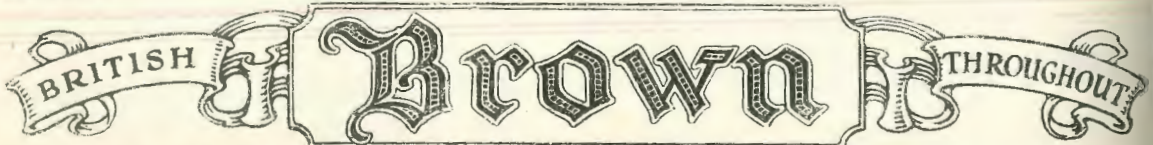
The BROWN Cabinet Loud Speaker. A beautifully proportioned Cabinet type which will readily harmonise with any furniture. Unsurpassed in tone as in appearance.

## NOYES BROS.

(SYDNEY) LTD. (MELBOURNE) PTY. LTD.

BRISBANE: Perry House, Elizabeth Street.  
 SYDNEY: 115 Clarence Street.  
 NEWCASTLE: 11 Watt Street.  
 MELBOURNE: 495 Bourke Street.  
 ADELAIDE: Darling Buildings, Franklin Street.  
 HOBART: 145 Macquarie Street.  
 And at LAUNCESTON. Also from J. W. R. Gardam, PERTH.

Write for Booklet  
 No. 19, post free



# The Control Room at 3LO

As a musician that with flying fingers touches the keys of some loved instrument even so do the control engineers of 3LO, Melbourne, manipulate the switches and rheostats of their wireless controls. As you go into the studio at 3LO, Melbourne, you pass by a door that is sometimes ajar, and may catch a fleeting glimpse of big ebonite panel valves and wires that look mighty business-like, or when actually in the studio, you may become aware of the observation window through which at times may peer an interested face or two, or signals on white cards may convey their mute message to a performer fronting it. That little room is the centre of 3LO, Melbourne's nervous system. Comedians and other critics have been known to make sport of the name of Wireless, by gaping with real or assumed amazement at the concentrated assemblage of wires in a wireless set or broadcasting station, but of course the more educated public is aware that these would have no more to do with the actual transmission of music, song, and speech all over the world from 3LO, Melbourne, than the ashes in a baker's oven have to do with the chef d'oeuvres at a banquet. There are no wires stretching between the big aerial at Braybrook and the great empty spaces of inland Australia and abroad, and yet 3LO, Melbourne, makes itself heard to some purpose across all the wireless ways that lead it to everybody's homes. But in the control room there are wires and things tangible enough and that require very skilled and constant attention. A wireless engineer is not, as some of the old school might imagine, a white-eyed and greasy mechanic in overalls with a blackened face. Far from it! He is a most dapper, spick and span young man who smacks of the quarterdeck. In the control room everything is shipshape. Hither are led dozens of telephone wires direct from the various halls and theatres from which 3LO, Melbourne, broadcasts programmes. There are thirty-four of these including a general wire from the G.P.O. set apart for connection to any Trunk line that may be selected for a country transmission. High upon the roof of Cambridge Buildings the receiving aerial of 3LO, Melbourne, shimmers from its white masts of wood, and is led down devious ways to its second floor destination. It is rather a poor aerial as aerials go, but strict attention to insulation and other points often overlooked has made it efficient enough to work the control receiver with ample volume on two valves. It may be of interest to note that the lift in the building is not electric but hydraulic, and the absence of all other electric machinery is undoubtedly essential to good results. Either from the studio, direct or from one of the transmission lines the lead from the microphone in action runs into the central control panel and is there amplified by three valves and sent on its journey, still through wires, overland to Braybrook, there to be transformed into pure wireless. It may with advantage be stressed that the actual broadcasting is not done from the studio in Collins Street, Melbourne, at all. All that is done at the studio (though it is a pretty big All) is to pick up, amplify, and control the impulses that are sent by wire to Braybrook. At the control panel is always in attendance a skilled operator, who listens intently

to the actual sounds being broadcast from Braybrook. They are picked up in his control receiver as in any other receiver. If he steps outside the door he may also hear faintly the original sounds from the studio next door, and it is a most interesting and almost uncanny experience to stand halfway as it were between the two extremes and hear on the one hand the straight human voice singing from the studio and on the other its verisimilitude flung up and caught again out of the other.

Now the duties of the control operator are by no means a sinecure. Besides routine work of attending to the batteries, valves, connections and general upkeep of the apparatus in his charge and the direction of all the outside arrangements, he is responsible for the volume of the sounds broadcast from the studio. Near the centre of the control panel is a handy dial, and it is this that determines at the will of the operator the degree of loudness or softness, or in other words, the modulation of the volume, and to some extent the tone of the sound supplied. In the case of a big brass band, or a shrill soprano, or any other source of music or speech that is likely to get beyond the control of the actual producer, the work of control makes a lot of difference in the quality of the results in your receiver. Conductors, singers, and speakers, very greatly in their appreciation of how to control the volume of sound for which they are responsible. There is often a temptation to 'burst forth into song' that defeats its own object and merely produces what is known as 'blasting' in the microphone, and consequent harshness and indistinctness in the receiver. So that the work of the trained young men in the control room is almost equivalent to that of a secondary conductor or listener-in-chief. It is not too much to say that the splendid modulation and tone effects for which 3LO, Melbourne, is famous even so far away as Canada as well as within its own Australian shores are the direct result of the discriminatory taste of the engineers in charge of its controls. Besides electrical methods of attaining this end there are of course, other means employed. A word to an over-zealous conductor, singer, or speaker, too often falls on deaf ears, because it is, after all, most difficult for the performer to gauge correctly the volume of sound he or she is producing. That soft voice that is an excellent thing in a woman is also a thing of super excellence in broadcasting, and delicate inflections of volume need doubtless to be more studied by broadcasting performers than they are now. Much may also be done by a judicious placing of the performer in relation to the microphone, and this is accomplished to some extent during the performance of a number by displaying control cards through the observation window, inscribed 'Nearer,' 'Further,' as well as 'Louder,' 'Softer,' etc. But these resources come into play only as general effects. Sudden increases or decreases in volume have to be taken care of entirely by the electrical control, even to the extent of switching in or out an additional amplifying valve.

When 3LO, Melbourne, enters upon one of its very special country transmissions, of which in Australia so far it practically holds sole honors, the control

room has an additional interest. Recent newspaper correspondents have had the misfortune to discover rather a mare's nest in regard to what they allege is the improved clearness of reception when country broadcasting is in operation. As a matter of fact there is only a very slight difference in the arrangements, and that difference is detrimental. A trunk line from the country supplies sounds amplified at the point of production sufficiently to carry it to the studio and these arrive at the control panel almost exactly as if they came from the studio next door, the only difference being in the nature of defects that may unavoidably be introduced from the long length of the trunk line. Insofar as the actual broadcasting from Braybrook is concerned there cannot be one iota of difference between studio and outside transmissions, since both equally pass through the control room. That disposes effectually of the bogey of remote control. But another very interesting feature of these remote transmissions is the system of inter-communication between the operators at the ends of the trunk line. When an outside transmission is arranged anywhere in or near the Central Telephone Exchange of course it is a fairly easy matter to secure two telephone lines to the studio and to reserve one for transmission and the other for communication between operators. To secure two trunk lines from a country centre, however, is not so feasible, and 3LO, Melbourne, has adopted a device introduced by its studio engineer and known as a phantom circuit. Briefly, this consists in using a transformer at each end of the trunk line with a central tapping and a Morse key and buzzer at each end. By this means the modulated sound-carrying wave traverses the line undisturbed by any Morse code signals that may be keyed into the line, as these are balanced out. The technical operation need not be explained here, but it is a most dextrous application of an electrical device to the elimination of a second inter-communication wire.

The control room is not without its humors and irritations. An alert operator frequently saves a performer from embarrassment and the public from some unintentional interludes by a prompt throwing of the switch. It is hard to realise that the innocent-looking microphone with which you are alone, alone, all, all alone is really the concentrated organ of hearing of the whole world of listeners-in, and will even record for their behalf your softest sigh of relief when you've finished talking to apparently nobody. The bishop who concluded an eloquent sermon with the pious aspiration that 'I hope we shall all meet in Heaven' and remarked almost in the same breath to the announcer, 'I don't think... I spoke too long, did I?' but was cut off by an over-zealous control operator at the unfortunate word 'think', was not a Melbourne bishop, but his apparently awful anticlimax is an apt illustration that control operators too at times 'don't think!' Occasionally at banquets and other solemn functions when there is an interval and general whispered conversations ensues the alert operator has to tone down as near to extinction as possible the inadvertent indiscretions of persistent chatters. Even at that recent solemn function of Anzac Day at the Exhibition the general effect of the gathering was greatly marred by dignitaries near the microphone who kept up an audible whisper during the band's sympathetic rendering of the Funeral March and on other unsuitable occasions, when the

control operator's fingers must have itched to cut them out could he only have left in the rest of the service. How his fingers must also have itched to display the word 'silence' on a big placard before the offending great ones! Another aspect of control room experience lies in the many calls that come through almost nightly, enquiring whether 3LO, Melbourne, has broken down, or why isn't it broadcasting? As the operator has to switch off his receiver in order to hear and answer such complaints he may be pardoned if at times his reply may sound somewhat abrupt. It cannot be too fully realised that the whole of the control at 3LO, Melbourne, is done by actually listening-in at the studio with a receiver of simple and conventional design and of only two valves, so that the control operator is under the same conditions exactly as any other listen-in. He does not 'twiddle' with his receiver controls, however, but with his transmission controls, and having got long past the stage of 'twiddling for twiddling's sake' and having a complete realization of the importance of his duties, he is certainly to be congratulated on the excellence of his service to the multitude who listen in daily to 3LO, Melbourne. People who write to 3LO, Melbourne, their many congratulations on the excellence of its transmissions rarely address them to the control room operators but the compliments rightly belong there, and this present article makes no attempt to conceal that it is intended as a compliment to the control staff of 3LO, Melbourne. It is a tradition of the service that their names must not be divulged so in the words of the song: "Oh no! we never mention them, their names are never heard!" Nevertheless, as far as the actual broadcasting of the 3LO, Melbourne, programmes is concerned the estimable young men in the control room keep their end up with the best, and the longer and more critically we listen-in the better we realise the fact.

#### "THE RADIO GUIDE."

We are in receipt of a handsome Radio publication entitled "Radio Guide." This book is of 104 pages, with attractive cover, and contains much of interest to the Radio fan, whether he be proficient in Radio matters generally or whether he be the merest novice. Huge numbers of this book were sold at the recent Radio Exhibition held in Sydney. An announcement concerning this book (price 1/-) appears on the advertising pages of this issue.

Albert Hall, Thursday, 10th June, 1956

## RECITAL

MILDRED BELL  
(Contralto)

ERICH JOHN  
(Pianist)

Stanley Tamblyn  
(Bass)

Enid Tardent  
(Accompaniste)

TICKETS 3/-

Reserves at Palings 1/2 extra

# Questions Answered

A.H.C.Z., Bundaberg: From your description and diagram we cannot see where your trouble lies. It seems that somehow the biasing voltage is connected to the filament battery on the lower valve in your sketch. We would suggest that you rewire the push pull amplifier and carefully follow the wiring method.

S.A.S., Malanda: Read the article which appears in this issue on the spark coil transmitter.

P.S., Pomona: Look up article on short wave receiver appearing in May issue of this journal. The circuit you submit is quite suitable for reception on the 200 metre band. The following are the coils necessary:—

Metres.	Sec.	Tickler.
100	15	10
150	20	15
200	30	20

When tuning higher than 100 metres see that the small condenser in aerial circuit is "shorted."

A.J.H., Malanda: (1) The Station you refer to is A5LF—an experimental Station of South Australia. (2) Would suggest that you write to the Barnes Auto Coy., North Quay, Brisbane for all information concerning the CAV battery.

Mr. R. E. MacIntosh, Engineer at Station 4QG, Brisbane, is the proud daddy of a new baby, which recently arrived to gladden his heart. "Mac" says he has to do two "night shifts" now—one at 4QG and the other when he gets home! !

# A.W.A. RADIO GUIDE 1/-

Contains "solid, useful and essential information which no man with a Broadcast Receiver should be without," so writes the "Wireless Weekly" Book Reviewer in the May 14th issue.

Over one hundred pages of informative wireless matter.

As the edition is limited, make early application for your copy.

**Amalgamated Wireless (A'sia) Ltd.**  
King & King Chambers, Queen Street  
BRISBANE

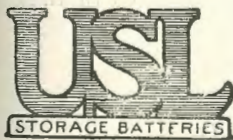
Please forward copy of the A.W.A. "Radio Guide" for which I enclose stamps to the value of 1/-.

Name .....

Address .....

"U.S.L. Will Serve You Well"

## There's Longer Life and Better Service in U.S.L. Radio Batteries



Service Station  
CREEK STREET  
BRISBANE  
(Opposite Gresham Hotel)

INSTALL a U.S.L. Radio Battery for the Better service it means. For its ability to receive clearly the long distances.

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

### 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

# BUTLER BROS. [Aust.] LTD.

"Monarch House"

CREEK STREET, BRISBANE

## Correspondence

(To the Editor, "Queensland Radio News.")  
River Terrace, Chelmer, 3/5/26.

Sir,—The following experience may be of interest to your readers:—For three or four months I have been using a 3-coil regenerative set, employing detector and one stage A.F. amplification, and have received practically all the Australian broadcasting stations on it, most of them at decent head-phone volume. Shortly after big 4QG came on the air and made the Southern stations keep off the aerial, I decided to dig up the old crystal set, and the result was very gratifying. The splendid volume with which the local station came in encouraged me to try the Southerners, and my first attempt was rewarded with 3LO's and 2BL's coming in, very weak, but clear. A few days ago I sought to improve loud speaker reception from our big station, and decided to use the old crystal set as detector, connecting what are normally the head phone terminals to the primary of the transformer, putting the detector valve out, and using the other as amplifier. The reception was greatly improved, with no appreciable decrease in volume. At 10 p.m. I thought of the Southern stations, and, still using the crystal set as detector, but of course with the head phones in place of the loud speaker, I tuned in 3LO, 2BL, 5CL, and 3AR—3LO comfortably loud and interfering somewhat with 2BL, 5CL audible enough to follow, with 3AR perhaps a little weaker. This experience leads me to believe that there is a deal more in the crystal than is generally admitted, especially when I consider that my crystal set is certainly not the best. It is a simple affair, consisting of a spider-web coil in parallel with a .0005 variable condenser and an ordinary unenclosed detector. It does not give the same amount of volume as my two valver, nor is it anything like as selective, but still it is an agreeable surprise to me, as it may be to any of your readers who would care to experiment a little.—I am, sir, etc.,

"GALENA."

(To the Editor.)

Brisbane Street, Mackay,  
May 18th, 1926.

Dear Sir,—With the object of taking up as little of your time and space as possible, I must again refer to Mr. Reed's article on "Distortion." You will observe no mention was made by me of fading, nor did I suggest waves reflected from a plate-glass mirror, but I did say approximately .0005 seconds, and I still maintain this, against Mr. Reed's assumption. A very strong hum is noticeable from 4QG, and in my opinion this hum is responsible for the distortion complained of, and I have it from good authority that this hum is also very noticeable in Townsville, Longreach, and Winton.

Possibly the heavyside layer theory will explain this, in spite of the good reception from other stations over the same distance. I would like to hear other views on this subject.—  
Yours truly,  
A. B. MILNE

## Popular Item Competition

The response to our Popular Item Competition for May showed slight improvement over the figures for the previous month, but the enthusiasm displayed is not great enough to warrant us carrying this competition on any longer.

The item receiving the greatest number of votes was "Uncle Ben's Bedtime Session," and the lucky form drawn from these votes bore the signature of

H. TWEEDLE,  
Coogee, Sydney,

to whom a cheque for £2/2/- will be forwarded.

*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.

Obtainable from all Licensed Dealers

Queensland  
Agents

**Motor Supplies Ltd.**

Where Adelaide and Boundary  
Streets meet—Brisbane.

**Willard**

**RADIO  
BATTERIES**

# A.W.A. VALVES Make Your Set Perfect

## A.W.A. 99, A.W.A. 33, A.W.A. 109X

**Economical, distortionless and dependable, they give lasting service; while the symbol A.W.A. on each Valve guarantees efficient performance.**

The characteristics of these valves are similar in all respects, but their bases differ.

Low consumption dull emitters, they operate with a filament current of only 0.06 of an ampere. Dry cells may be used for filament lighting. The filament is of thoriated tungsten, thus giving low power consumption, and operating temperature and ensuing longer life.

The electrostatic capacities between the electrodes are very small, consequently the valves are exceptionally good radio frequency amplifiers. They likewise function well as audio-frequency amplifiers and detectors. They can be relied upon to give uniform operation



A.W.A. 99

## A.W.A. 33, A.W.A. 99 and A.W.A. 109X Valves

### CHARACTERISTICS

FILAMENT		ANODE VOLTAGE	VOLTAGE AMP. FACTOR		ANODE IMPEDANCE
Volts	Amps.	Det. & H.F. Amplifier	L.F. Amplifier	"M"	"R" in ohms
3.0	.06	20-40	40-80	6	15,000

### BASES

A.W.A. 33—Standard English 4 pin

A.W.A. 99—American UV199

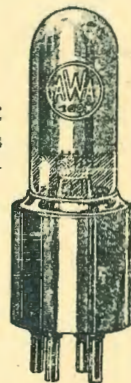
A.W.A. 109X—Large Standard UX201A

A special feature of the A.W.A. 109X is that it is interchangeable with the 201A

**A.W.A. VALVES ARE MATCHED**



A.W.A. 33



A.W.A. 109X

A.W.A. Valves are manufactured wholly in Australia at the Company's Valve Works.

Efficient Valve production necessitates a comprehensive organisation; radio engineers conversant with the latest Valve practice in England, the Continent and the United States; research engineers concentrating their energies on Valve improvements; trained machine operators and equipment of the most modern type; such an organisation has Amalgamated Wireless built up, constituting an entirely new addition to Australian manufacturing progress.

Every Valve before leaving the factory is subjected to a series of exhaustive tests in respect of each characteristic. Only those measuring up to the high standards set by A.W.A. are passed as O.K.

Every day letters are received testifying to the consistent results that are being achieved by experimenters and listeners with A.W.A. Valves.

**OBTAINABLE AT ALL DEALERS**

167-9 Queen Street,  
Melbourne

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

King and King Building,  
Queen Street, Brisbane

97 Clarence Street, Sydney

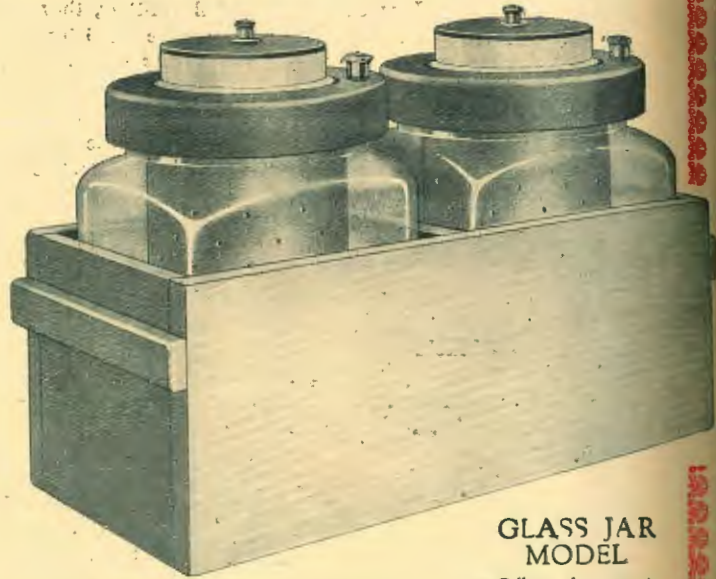
*This is the Battery you have been waiting for*

THE WONDERFUL  
**RADIO BLEECK 'A' Battery**

**Instantly Charged by Adding Water**



Single Cell in Glass Jar. Voltage 2.7.



**GLASS JAR MODEL**

2 Cells in glass container and wooden box Weight fully charged 20 lbs.

Price, with 3 Charges in Packets **£2-5-0**

Price, with 6 Charges in Packets **£4-10-0**

Fully charged in one minute by adding water to powders and solutions supplied. No other electrical apparatus required. Voltage of 2 cells in series, 5.5. Capacity approx., 50 ampere hours.

Don't worry any more about accumulators, but make up your own electricity! ANYWHERE! NO WAITING—NO DELAY. It is the ideal battery for radio reception owing to its simplicity and constancy.

These batteries are now available. All orders must be accompanied by remittance. If your Radio Dealer is unable to supply write us direct.

**BLEECK RADIO BATTERIES LTD.**

**Bleck House, Burnett Lane, Brisbane**

Phone Central 8570

**W. A. BLEECK (Inventor)**  
Managing Director