

The Queensland Radio News

"Your Own Wireless Journal"

6^D



Vol. IV.

Monday, 2nd APRIL, 1928

No. 3

Registered at the G.P.O., Brisbane for transmission by Post as a Newspaper.



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SPEAKER

'Chippendale Mahogany' Type AC9

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IT is a model whose performance will please the most exacting critic, whether he be merely a listener or an enthusiastic radio experimenter, and one that is worthy of a place in the most tastefully furnished room. The "Chippendale Mahogany" will appeal equally to the listener of taste and to the advocate of Radio Realism.

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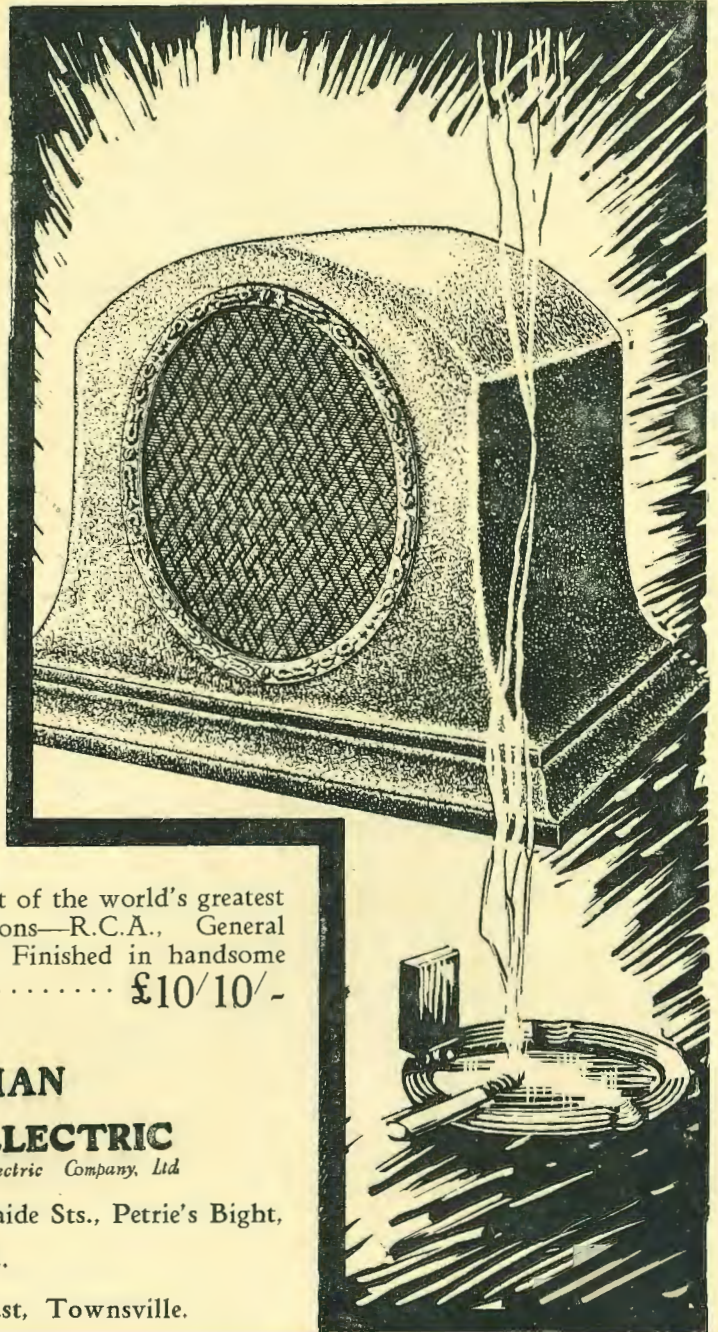
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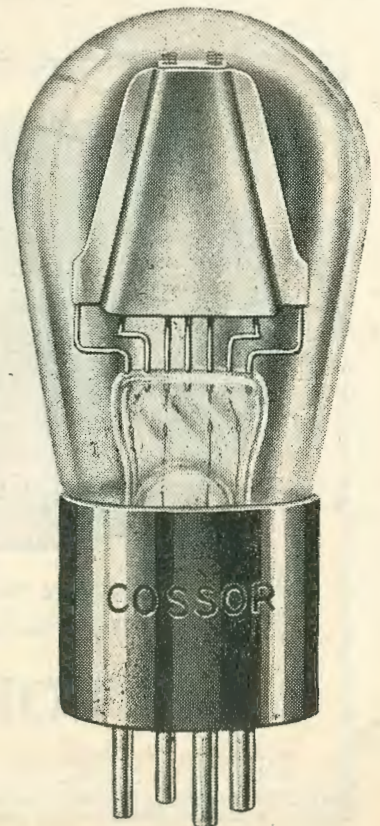
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RCA Loudspeaker 100A



The Cornet Player steps into the room when Cossor Valves are used

USE the new COSSOR POINT ONE VALVES and you will enjoy the thrill of true-to-life Radio. No longer an inanimate and mechanical reproduction, but life itself. Every vibrant passage is reproduced with great mellowness. From the French horn to the cornet and from the 'cello to the violin, each instrument is heard in all its natural beauty. No harshness, no discordant sounds—no distortion. And the underlying reason for such marked superiority in tone and volume lies in the Wonderful Kalenised filament used in combination with the method of construction employed. This is an exclusive Cossor feature—no other valve has it. • No other valve gives such long service with such a meagre consumption of current.



2, 4 and 6-Volt
 UX Bases **13/6** Each

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Cossor "The British Valve which serves you longest"

Brisbane's New Experimental Station

4RM HOPES TO BE ON THE AIR EARLY IN APRIL.

For several weeks of late a "mystery" station has been testing between 10 p.m. and 10.30 p.m. His wave is very sharp, his quality is very good, and his power, as yet, very low.

One of the chief discussions among local wireless fans in trams and trains of late has been centred around the question "Who is he?"

The identity of this station has been kept a very close secret. Mr. C. V. Woodland (who is to be connected with the station as announcer) made a statement to "The Brisbane Courier" some few weeks back, but nothing further has since been published in that paper.

Through the courtesy of Mr. A. N. Stevens (of Harringtons Ltd.), who is actively connected with the station, we are able to publish a few details concerning 4RM.

In the first place, 4RM is, as yet, purely an experimental station, in which a small band of enthusiasts have invested their spare time and spare money.

4RM has been testing on 8 watts, although eventu-

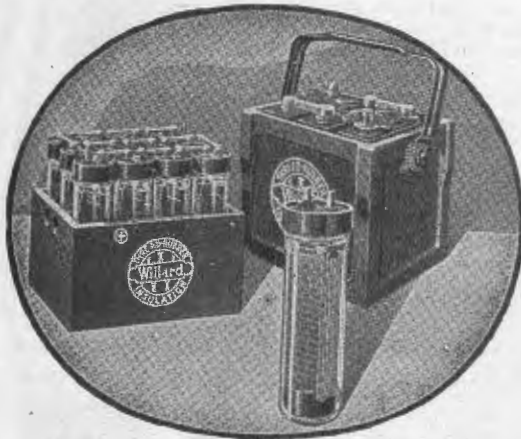
ally 50 watts will be employed. The wavelength is set at 240 metres, and during their tests his wave was noted to be extremely sharp while transmission of music and speech was very well modulated.

Good reports of reception have been received from Toowoomba, Melbourne, and many other centres, while many favourable comments have been passed on the transmission by leading radio traders of the city.

Of course, 4RM as an experimental station cannot give a regular service. His license only permits him to broadcast music "for research purposes," but it is very likely that 4RM will broadcast entertainments under this heading that will be worth listening to.

It has been stated from a reliable source that if 4RM can prove itself as an experimental station, a well-known newspaper and a well-known musical warehouse are prepared to back it financially as a "B" class station.

Whether this be so remains to be seen. One thing, however, is certain, 4RM is no "ordinary" experimental station, and we believe big things will yet come of it.



Made in both "A" and "B" Types to suit every
Wireless Requirement.

Ahead in Design and Construction

You can get a WILLARD "A" or "B" Battery at such a low price that there is no reason for taking chances on any battery less reliable than a WILLARD. WILLARD Radio Batteries are the farthest advance in battery design and construction for radio work. Connect up your "set" with—

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PERRY STREET off Boundary Street

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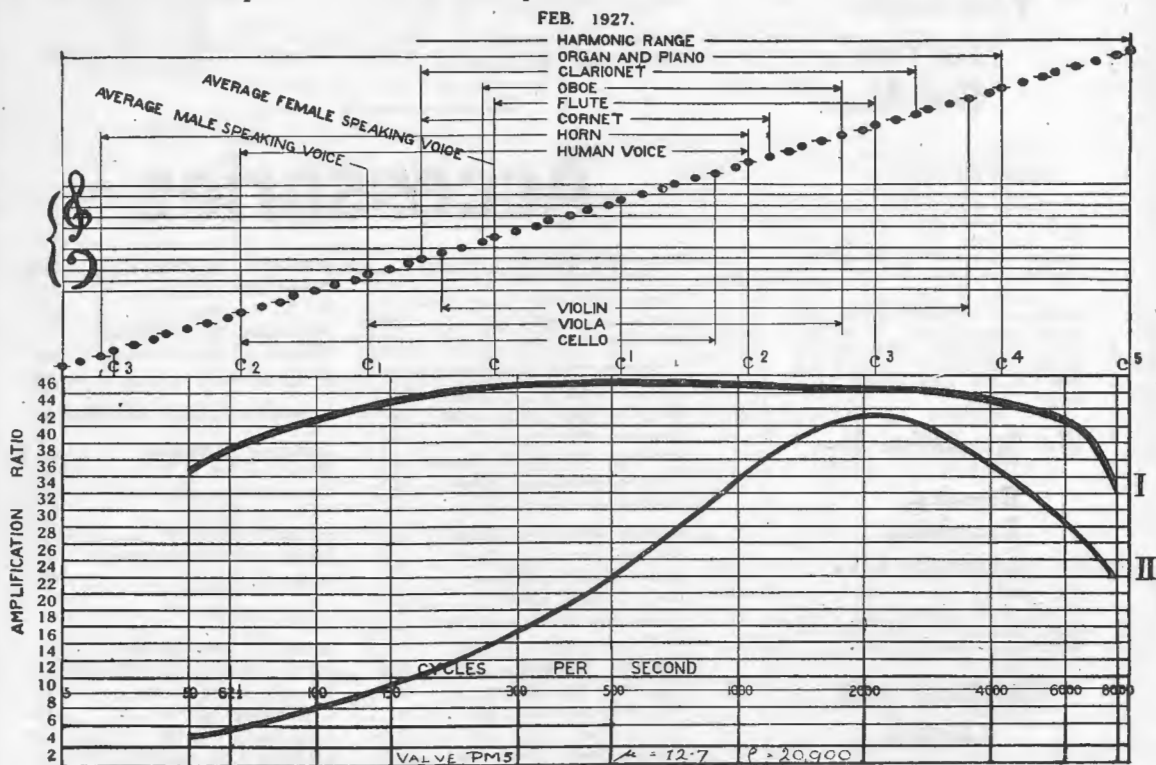


BRITISH MADE
AUDIO FREQUENCY
TRANSFORMER

TYPE AF 3 - - - - 42/6.

The charted performance of the Ferranti AF 3 Transformer is published below. Note the **UNIFORM AMPLIFICATION**

and buy your transformers only from manufacturers who publish the curve showing actual charted performances of their product.



Curve 1.—The Ferranti A.F.3 Transformer.
Curve 2.—A well-known transformer made in Australia.

The "Ferranti" Transformer is designed to improve your set by increasing the efficiency of your Loud Speaker, and is constructed in two types. AF 3 (up to 410,000 ohms), 42/6—no better Transformer at any price—and AF 4 (up to 90,000 ohms), 32/-. No better transformer available at the price.

Isolate your Loud Speaker with a Ferranti Output Transformer.
Obtainable from every Radio Dealer in Australia.

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WEDMA LIMITED, Adelaide. EDGAR V. HUDSON, Brisbane. GIBBS, BRIGHT & CO., Perth. I.



**“ You look
Worried,
Old Man”**

“Worried isn't the word, Jack.”
“What's the trouble?”

“I've been trying for weeks to find out what's gone wrong with my receiver, but it has me beaten. I used to get all the stations once, but now—”

“Look here, old man. Dry those tears. Take your set into Mick Simmons Ltd. They specialise in helping radio fans out of their difficulties. They'll put you on the right track in a jiffy.”

We Specialise in—

**Repairs
Re-wiring
Testing, Etc.**

of all Radio Apparatus. Let your problems be ours. An enquiry incurs no obligation.

**Consult our
Expert**

**COUNTRY
LISTENERS**

Your requirements receive prompt and careful attention. Orders received by mail are, where possible, forwarded the same day.

The World on 2 Valves

Listen-in to foreign short-wave stations direct. Build the Radiokes Short-Wave Set. We supply advice and constructional details free.

Radiokes Short-Wave Kit, 15 to 135 metres 55/-
Radiokes R.F. Choke 8/6

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Outstanding for their selectivity, tonal purity and beauty. A “MAGNAVOX” is the Receiver of a lifetime. Get our prices. Many models to choose from.

We are also agents for “OCEANIC,” “SIMOLIAN” and “ECLIPSE” Receivers.

Accessories

Phone and Speaker Extension
Connectors 1/
Phone Cords with Loop Ends 1/9
Phone Cords with Tips 2/3
20ft. Extension Cords 2/9

Advance .0005 S.L.F. Cond... 10/6
Advance .00035 S.L.F. Cond... 10/
Advance .00025 S.L.F. Cond... 9/6
Ormonde .0005 S.L.F. Cond... 12/6
Emmco .00015 S.L.F. Cond. .. 12/

Renrade .00025 Grid. Cond. ... 1/6
Renrade .2-meg Grid Leaks .. 1/6
Muter .00025 Grid Cond. 2/6
Muter .2-meg. Leaks 2/
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Repeater Heaphones, pair ... 18/6
Manhattan Headphones, pair.. 18/6
Rhemo Headphones, pair 15/
Trimm Headphones, pair 22/6
Brandes Headphones, pair ... 22/6

Manhattan Speakers 23/6
Tower Musicsinger 84/
E. S. One-der 60/
Magnavox, Cornell Model ... 75/
Magnavox, Cornell Model ...105/
R.C.A. Model 100A. £10/10/

Radiotron U.X.210-A 11/
Magnavox 201-A Type 13/6
Condor P.R.55, 6v., .06 A. ... 13/6
Philips B.406, 4v., .1A. 13/6
R.T.56, 4v., .1A. P. Amplifier 13/6
Condor P.R.48, 4v., .06A. ... 13/6
Radiotron U.X.199 13/

Winchester 45v. H.D. Batteries 25/
Winchester 22½v. H.D. Batteries 12/6
Ever-Ready W.P. 60 18/
Ever-Ready W.P.40 12/6
Ever-Ready No. 126 “C” Bat. 3/3
Columbia 1.5v. “A” Bat..... 3/

Mick Simmons Ltd

“The Home of Sport and Radio”

Queen Street

BRISBANE

ALFRED T. BARTLETT
Editor



LEIGHTON GIBSON
Technical Editor

The Distortion Problem

THE most vital problem now confronting broadcasting in the country centres of Queensland is the distortion that accompanies 4QG's reception during the hours of darkness. It is a problem which, unless grappled with immediately, threatens to cripple the expansion of wireless in Queensland.

Everybody realises that the Distortion Problem is not by any means a new one. Every high-power broadcasting station is troubled with a measure of distortion over a certain area. However, the complaint in Queensland has become so widespread of late, that unless the authorities step in and take some action in endeavouring to alleviate the trouble, radio reception in the country—insofar as our own station is concerned—will pass into oblivion.

The Director of 4QG affirms that the trouble does not lie at the door of his station. He asserts that the delicate meters of the station show correct readings day and night, and puts the cause of the trouble down to purely physical and atmospherical conditions over which the station has no control.

While we are quite prepared to accept Mr. Robinson's theory, we sincerely trust that the subject will not be dismissed at that.

With the approach of winter, it appears to us that it is an ideal time of the year for the station to experiment with lower power. When 4QG made the announcement of increased power early in the summer, it was doubtless done for the purpose of penetrating the severe static experienced in far Northern Queensland. Strange to say, country listeners, almost without exception, state that this announcement marked a change for the worse in the reception of 4QG. Whether this was simply a prank of Mother Nature or whether the increase in power DID actually have an effect on increasing the field and intensity of distortion, is not known. In any case, lower power experiments could not do any harm, and would at least settle this perplexing question.

Upon pages 27 and 28 of this issue an article on "Distortion in the Country" appears. In our next issue a more complete article will be published. We ask the co-operation of our country readers living in the affected areas to send in their answers to the Questionnaire which appears on page 28.



4QG LISTENERS THINK THAT



—The Hinkler broadcasts were a distinct triumph for 4QG. The gallant airman faced the microphone fearlessly, and by the time his Brisbane programme was completed, he should have quite overcome that distressing complaint known as "mike fright."

* * * *

— It is good to note that a policy has at last been adopted at 4QG with regard to the pronunciation of the name of our fair city. Even "Market Reports" has put the ban on the "bayne," as has also Harry Humphrey (announcer) and other members of the Queensland Radio Service. What a victory for the "anti-baynes"!

* * * *

—"Sandy and Percy" are as funny as "The Two Black Crows." The quaint humour of Percy never fails to raise a snigger—even from the most woebegone listener.

* * * *

— The big percentage of crystal-set owners are of Scotch birth. One canny enthusiast in South Brisbane never fails to lift the catswhisker from his crystal—to save depr-r-eciation on the wee cr-r-ystal!

* * * *

— Whilst on the subject we may as well gie ye this ane: A Presbyterian, unable to attend church because he could not swop two three-penny pieces for a saxe-pence, tuned in to the church service. In his rush to switch off the set as the collection was announced, he broke his thumb. A case of false economy!

* * * *

— This distortion trouble in country districts should be tackled immediately. While the seat of the trouble may not be at 4QG (as witness the clear daytime reception) license holders in the affected areas should at least have the satisfaction of knowing that some effort was being made, either by 4QG or by the Commonwealth authorities to trace down the source of or the reason for the distortion. It is one big problem in the path of radio progress that merits the united efforts of all concerned.

* * * *

The laurels for the best popular entertainment of the month are divided between Whincup's concert (held on March 15th) and "The Troubadours" (March 19th). Both concerts were outstanding for the high excellence of artists and numbers. This is the type of concert that is always well received.

— We wonder how many physical culture fans will brave the chilly blasts of a winter's morning to enlarge their biceps or reduce their waistline per 4QG's Wednesday morning physical culture session. May the ice never freeze on their aerials.

* * * *

— The Digger plays are due for a spell. We enjoyed the first one greatly. The efforts that followed were so similar and so devoid of plot that they wearied us. Now that they have all been repeated, we'd like to call a halt. Bill, Snowy, Dad and Long'un are all fine vocalists, but a programme of good songs cannot really be called a play; rather is it an impromptu concert.

* * * *

— Brisbane must be painfully free of concert violinists, judging by the programmes. Few instruments broadcast so well, and none can stir the feelings as can a fiddle well played.

* * * *

The Saturday afternoon transmission from the Brisbane racecourse are a great innovation. Nowadays a man may choose the gee-gee of his fancy before he returns home from business. After lunch, he may dutifully don his gardening clothes and tend the cabbage patch or the pansy bed, dashing upstairs betwixt the musical interludes to hear the descriptions of the races broadcast. Should the horse of his fancy flash past the post first, he may trip downstairs joyfully, and with a light heart proceed to shave the lawn with renewed vigour. Should Fate however deem it necessary to change "a certainty" into "a disaster" the feeling is best expressed by slashing at the backyard paspalum with a blunt sythe.

* * * *

Uncle Ben should be called into Diplomatic Service for the Empire. On Saturday, March 24th, he accomplished the almost impossible feat of getting a Hebrew, an Irishman, and a Scotchman to talk, joke and sing together before the microphone. The best of the joke is that they were real types, too! It's wonderful what a bedtime story will do.

DON'T GUESS

Make certain of what you are going to listen to by sending 9/6 to Box 1095N, G.P.O., Brisbane, for 52 weekly issues of the "Broadcast Bulletin" Posted every Thursday evening. Programmes commence from following Monday.

Listen to the World
with this Simple

SHORT WAVE ADAPTER

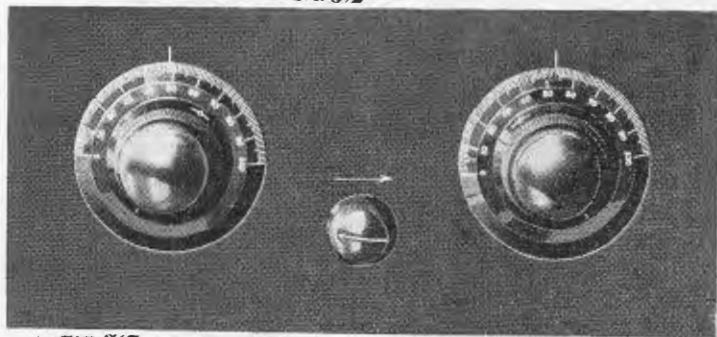


Fig. 1: The Front Panel presents a neat appearance

It's all very well to listen to London, picked up and relayed by one of our big Australian stations. But why not listen-in DIRECT—and not only to London, but to stations in every part of the world? This simple and inexpensive unit enables you to do this—and you can build it in a few hours, even if your previous experience of set-construction is nil.

By THE TECHNICAL EDITOR



OW that international broadcasting is an accomplished fact, the interest of nearly all radio enthusiasts is centred in the short wavelengths, and it is, we believe, the ardent desire of most of our readers to possess a receiver which will enable them to tune in to some of those far-distant stations which cannot be received on the ordinary broadcast set, no matter how elaborate it may be.

The construction of a separate short-wave receiver entails the outlay of more than many of us are willing to spend, but there is another, and considerably less expensive, way of attaining the desired end if one already is in the possession of a broadcast receiver having two or more valves, or, to be more accurate, a set with either one or two stages of audio-frequency amplification—preferably two. The short-wave adapter described in the following article is provided with a special plug, which, when inserted in the detector valve socket of your receiver, converts it into a set covering the "short" wavelengths between 15 and 130 metres. No extra batteries are necessary, and absolutely no efficiency is sacrificed, while the change from broadcasting to short-wave occupies less than a minute.

The Circuit.

Referring to Fig. 2, it will be apparent that the circuit in reality

Parts Used in Our Own Model

- A—Pilot .00015-mfd. Centraline Variable Condenser.
- B—Pilot .00025-mfd. Centraline Variable Condenser.
- C—Centralab 30-ohm Rheostat.
- D—Sangamo .00025-mfd Grid Condenser, with clips and 7-10 meg. grid leak.
- E—Radiokes Short-wave Coil Kit.
- F—Radiokes Radio - Frequency Choke.
- G—Terminal Strip, 3 x $\frac{1}{2}$, with two Pilot terminals.
- H—Pilot Cushioned U.X. Socket.
- I—2 Kurz-Kasch EZ-Toon Vernier Dials.
- J—One yard, 3-Core, 23/36 flex.
- K—U.X. Valve Base, used as plug.
- Y—Radiation Panel, 15 x 7 x 3/16in.
- Z—Stained Pine Baseboard 14 x 9 x 7/8in.

Accessories

One Valve, type dependent upon type used in receiver; see text.

NOTE.—While the experienced set-constructor may make some changes in his selection of parts, it is recommended that the above list be closely adhered to in order to ensure duplication of the results obtained with our model. This applies in particular to such items as coils and condensers; in the case of parts which perform a purely mechanical function, such as sockets, dials, terminals, etc., substitution may be made with safety provided, of course, good quality parts are used.

is a more-or-less conventional one-valve arrangement, with the "Weagant" regeneration control; in fact, by eliminating the plug and substituting terminals, the adaptor becomes simply a single-valve short-wave receiver of standard design. The aerial coil (1) is inductively (and variably) coupled to the grid coil (2), to which is also coupled the tickler coil (3), the coupling of this last coil being fixed in its relation to the grid coil. A separate tickler is provided for each grid coil (it is wound on the same former), but the single aerial coil suffices for all waves. A condenser (A) of small capacity tunes the grid coil, while regeneration is controlled by another condenser (B). A peculiarity of this circuit is that it is "series fed"; that is, the plate current passes through the tickler coil on its way to the plate of the detector valve. The choke coil (F) ensures that the radio-frequency energy from the plate returns to the filament via the variable condenser "B," and not by way of the batteries. Only three contacts of the valve-base plug (K) are used—the two filament, and one plate pin. By this means, the detector valve of the adaptor is supplied with both filament and plate current from the broadcast receiver to which it is attached, and the output is transferred to the amplifier in the latter, finding its way eventually to your headphones or loudspeaker.

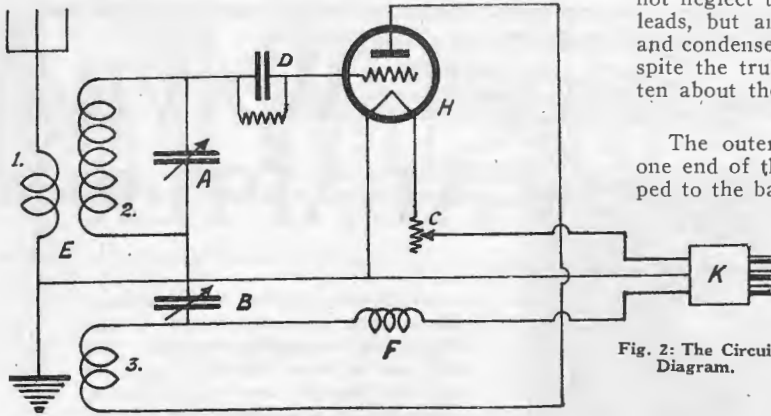


Fig. 2: The Circuit Diagram.

Construction.

The drilling diagram (Fig. 5), in conjunction with the templates supplied by the condenser manufacturers, will furnish all the information necessary to lay out and prepare the panel. The screws securing the condensers must be countersunk flush with the panel face, but the centre bushings are allowed to protrude. The edges of the panel may easily be given a finished appearance by first filing away the saw marks with a coarse file, then sand-papering until a smooth surface is obtained. A little oil rubbed into the edges will improve the colour. Any finger marks on the panel are best cleaned off by wiping with methylated spirits.

It is a wise plan to let a cabinet-maker prepare the baseboard for you; it will cost very little, and will be a much more satisfactory job than the usual length of scrap timber. It should have cleated ends like a drawing-board, in order to prevent warping, have square edges, and may be finished with walnut stain and shellac.

Screw the panel to the baseboard and mount all the parts on both. A sufficiently accurate idea of the location of the various parts will be gleaned from the pictorial diagram, Fig. 4. The layout is so simple that a dimensional drawing was considered superfluous this month.

A point which must not be overlooked when using the Kurz-Kasch vernier dials with Pilot condensers is that the centre-hole in the cork friction discs which accompany the dials must be enlarged in order to fit over the brass bushings, through which the condenser shafts project. This is important in the interest of correct operation of the dials. Notice that the coils are mounted well away from the condensers, so that the condensers are out of the strongest part of the magnetic field surrounding the coils, and the coils out of the static field surrounding the condensers. Do

not neglect this precaution; certainly it means longer leads, but an extra inch of separation between coil and condenser is well worth an extra inch of wire, despite the truly enormous amount that has been written about the importance of "short leads."

The Three-Wire Cable.

The outer braid is pulled back nine inches from one end of the three-core flex., and the latter is clipped to the baseboard, as shown. It will be found that each of the three conductors which make up this flexible cable has a distinctive colouring; usually one wire is white with a red tracer, one is white with a black tracer, and the remaining one is plain white. If this is the case, the red wire should be connected to the valve socket, the black to the rheostat, and the white to the choke. However, the red and black wires should not be cut

yet, as they may have to be reversed later. **This is important.**

The other end of the cable demands careful treatment. The braid is pulled back about three inches from the end, and each wire is bared of insulation for a distance of about three-quarters of an inch, after which the ends are twisted tightly and tinned. The next item to be attended to is the improvised plug.

It should not be a very difficult matter to acquire a burnt-out Radiotron 201-A valve, with the U.X. base. A Radiotron is specified for the important reason that the holes through the brass pins are larger in diameter than is the case with most other valves, this making it more convenient for our purpose. Burst

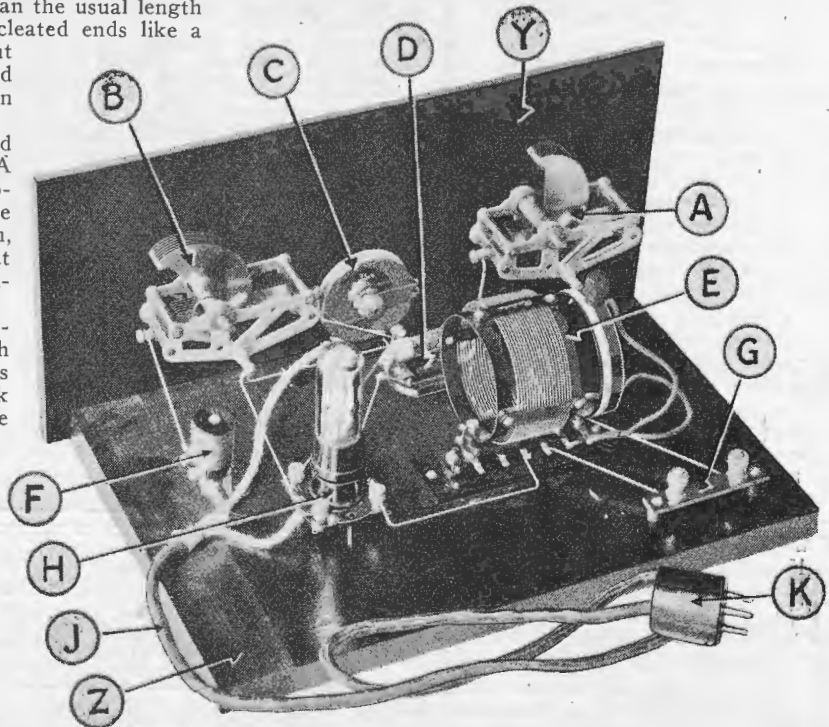


Fig. 3: This Back-panel View shows the Layout of the Parts and Disposition of the Wiring.

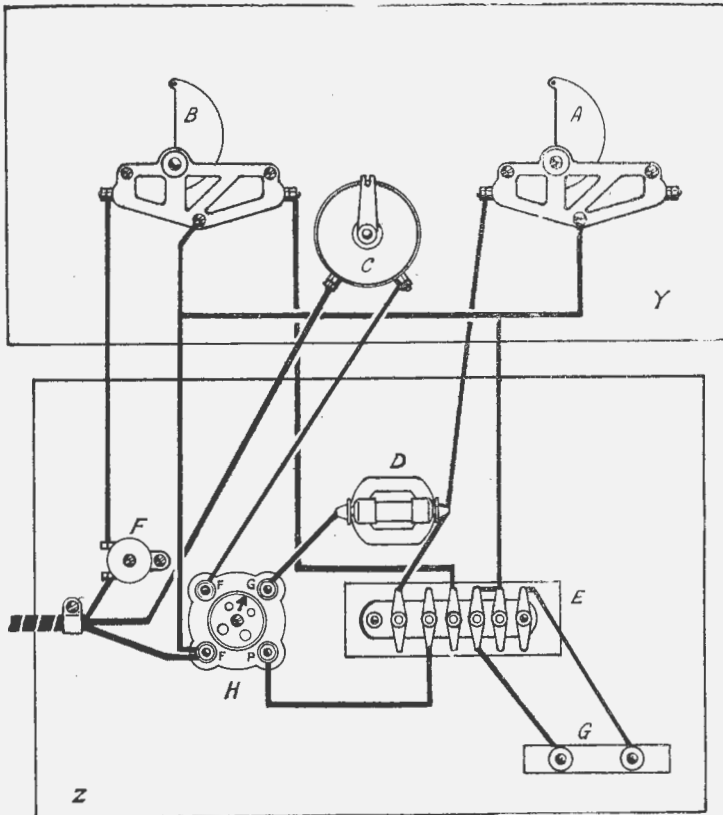


Fig. 4: For those who cannot follow a conventional wiring diagram this Pictorial Diagram is given. The heavy lines represent the connecting wires.

the glass bulb (no directions will be needed here!), and hold the pins of the valve over a gas-flame until the solder inside the pins melts, and it is possible to pull the interior assembly with its four wires right out of the base. Melt the solder again, and shake the valve-base until it is possible to see through each of the four pins.

Now the red and the black leads of the cable are to be "sweated" into the two filament pins, and the white wire to the plate pin. Reference to a valve socket will remove any doubt concerning the identity of each pin. When this job has been done satisfactorily, fill up the valve base with molten sealing-wax, flush with the top.

Wiring.

In this set, the wiring is so very simple and there are so few wires crossing over one another, that it was thought desirable to use 18 gauge bare tinned copper wire for connecting the parts. The form followed by the various wires is revealed in the back-of-panel view, Fig. 3, and it will be seen that no spaghetti is necessary at any point. The connections are run as directly as possible from point to point, and the grid condenser and leak are adequately supported by the wiring itself. All joints are soldered

—a very easy matter when tinned wire is used.

Connecting and Operating.

A point to be observed in selecting a valve for the adaptor is that it must be of a suitable type to operate on whatever voltage your broadcast receiver uses. Many sets use "four-volt" valves, running on a four-volt accumulator, and in this case, any valve suitable for four-volt operation, and which is a good detector, will be correct. If the set works on a six-volt battery, then some type of six-volt valve must be used, and so on. The U.X.-199 Radiotron shown in the photograph gives excellent results, but the constructor need not, of course, adhere to this type.

The Radiokes short-wave coil kit is furnished with three separate plug-in coils, each fitted with its own individual tickler coil. Included in the kit is a printed folder from which much valuable information may be derived, and it is recommended that this folder be read through before the adaptor is placed in operation. The smallest coil, covering approximately 15 to 33.5 metres, should be tried first, as it is in this waveband that the largest number of stations is working. The aerial and earth wires are transferred from the broadcast set to the adaptor—later on, a double-pole switch should be made to do this duty—and the detector valve removed from the broadcast set. In its place, the valve-base plug previously referred to is inserted, and the broadcast set switched on. In order to conserve battery current, it is desirable to remove the valve from the radio-frequency stages, if your set has any, though this is not essential. Turn the rheostat on the adaptor about two-thirds on, and you are ready to search for stations. Remember that all tuning is done with the adaptor—the tuning controls on your broadcast receiver will have no effect whatever.

When the regeneration condenser (B) is turned towards maximum, the set should go into oscillation, this being indicated by a gentle hissing sound. If it

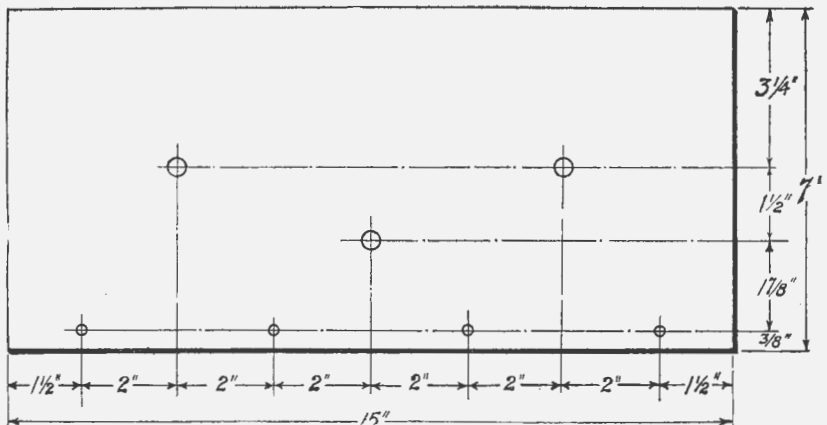


Fig. 5: Centre-to-centre Measurements for drilling the Front Panel. Use the centre-punch first.



EMMCO

*hands industry
a new
Radio
Factory*

IN the remarkable advance of the Australian Radio Industry, EMMCO has been an important factor. EMMCO parts are used in countless receivers, from crystal sets to super heterodynes. They have also been chosen by many set manufacturers who have adopted EMMCO parts as standard. From a quality point of view, consistent with reasonable price, EMMCO is a long, long way ahead on the Australian market.

The public knows this. Hence the reason why these nationally advertised radio parts have maintained their lead and will remain there. The public ASKS for them.

The magnificent new plant erected by Electricity Meter Manufacturing Co., Ltd., incorporates thousands of pounds worth of new machinery constructed to cope with the enormous production of EMMCO Radio Parts. 1928 Radio output will be twice that of any previous year. Not only will present lines be maintained and increased, but they will be added to by other lines such as new styles of transformers, dials, etc., etc.

EMMCO PRODUCTS ARE IN GREATER DEMAND THIS SEASON.

SOME EMMCO PRODUCTS.

A.B.C. Eliminators
"B" Battery
Eliminators
Transformers
Rheostats

Vernier Dials, including May delivery of the New VelmoDial at 6/-, and the Baby Velmo at 5/-.

Emmco
RADIO PRODUCTS
AT ALL DEALERS

SOME EMMCO PRODUCTS.

Headphones
Emmcostads
Switches
Jacks
Arrestors

MADE BY

ELECTRICITY METER MANUFACTURING CO. LTD.

will not oscillate, try reducing the aerial coupling; this is done by turning the aerial coil at an angle to the grid coil—it may have to be turned almost at right angles if the aerial is a large one. The tuning condenser (A) should be rotated very slowly, the circuit at the same time being kept in a state of gentle oscillation by constant re-adjustment of the regeneration condenser. When the carrier-wave (or "whistle") of a station transmitting telephony is picked up, the amount of regeneration is reduced in the usual way, until the speech or music is clear, and a slight re-adjustment made with the tuning condenser.

It may take some little time to become accustomed to the operation of the Kurz-Kasch vernier dials, but they will be found a wonderful aid to fine tuning, and—what is of the utmost importance in any short-wave work—they are completely free from back-lash or play of any kind. If it is desired to cover the entire waveband minutely, the dial should be moved over five degrees of its scale by the outer (rough adjustment) knob. The dial is then moved **back** over the same five degrees, this time with the inner, or vernier, knob, then moved forward once more, still with the vernier. This cycle of movements is repeated over the next five degrees, and so on. The method described may sound complicated and inconvenient, but one very soon becomes quite expert at it, and can cover the scale rapidly; and the fact that each and every part of the scale is covered not once, but **three times**, is ample assurance against the possibility of passing over any station, however weak. The adjustment of the rheostat is not at all critical, but it is of assistance frequently in clearing up telephony. For C.W. (continuous wave, Morse) reception, the circuit is in its most sensitive condition when it is just oscillating, and no more. For telephony, the most sensitive state is reached when the set is **on the verge**

of oscillation. This remark applies, needless to say, to any regenerative receiver.

Operating Hints.

After the set is in operation, the two battery wires at the adaptor end of the cable (previously referred to as the "red" and "black" wires) should be transposed, as the unit will give better results when these wires are connected a certain way round, depending on the valve used. When the correct connection has been determined, the two wires are cut to the correct length, and secured permanently.

With this short-wave adaptor the size of the aerial is immaterial. In common with all other receivers, it will give the loudest response on a long, high aerial, but it will operate splendidly on the average-sized aerial, somewhere in the vicinity of 80 feet in length and 30 to 50 feet high.

Closely related to the dimensions of the aerial is the matter of coupling between aerial and grid coils. Sometimes a point will be found on the tuning dial at which the set refuses to oscillate. This is due to a harmonic of the aerial's natural wavelength falling at this particular point, causing absorption of energy by the aerial. The remedy is to loosen the coupling between the coils until oscillation is again present. The coupling should be as tight as is possible consistent with constant oscillation. "Tightest" coupling is obtained when the two coils are parallel.

The table published on this page lists the main short-wave broadcast stations, most of which are audible in Australia at various times, together with their wavelengths and the appropriate plug-in coil. The smallest coil supplied with the Radiokes kit is designated "Coil 1," the medium "Coil 2," and the largest "Coil 3." Other coils are available, but the three furnished cover all the wavelengths at present used by short-wave broadcasters.



Short-Wave Broadcasting Stations of the World

With their wavelengths and transmission schedules (Eastern Australian Standard Time)

COIL No. 1: 15 to 33.5 Metres.

SSW ... Chelmsford (England), 24 metres; 10.30 p.m. daily.
 2NM ... Surrey (England), 28 and 32.5; 10.30 and 6 a.m.
 2XAG ... New York (U.S.A.), 16.
 2XAL ... New York (U.S.A.), 30.91.
 2XG ... New York (U.S.A.), 16 and 23.
 PCJJ ... Eindhoven (Holland), 30.2; all hours.
 PCTT ... Kootwijk (Holland), 21.
 PCMM ... The Hague (Holland), 25.
 PCPP ... Kootwijk (Holland), 27.
 RFN ... Moscow (Russia), 29; 6 and 8 p.m. daily, except Wednesday.
 RFM ... Khabarovsk (Siberia), 30; 8 to 10 p.m.
 RFL ... Russia—no particulars.
 JB ... Capetown (South Africa), 20 and 25.

JIPP ... Tokyo (Japan), 20.
 JKZB ... Tokyo (Japan), 20.
 POZ ... Nauen (Germany), 19; 6 a.m. daily.
 ANE ... Malabar (Java), 31.26; 10 p.m. daily.

COIL No. 2: 31.5 to 68 Metres.

2NM ... Surrey (England), 32.5.
 2XAG ... New York U.S.A.), 42.
 2XAF ... Schenectady (U.S.A.), 32.77.
 WLW ... Cincinnati (U.S.A.), 52.
 KDKA ... Pittsburgh (U.S.A.), 42 and 63.5; 6 p.m. daily.
 PCUU ... The Hague (Holland), 42.
 RFM ... Khabarovsk (Siberia), 60; 8 to 10 p.m.
 IMI ... Milan (Italy), 45; 9 to 11 p.m.
 PCLL ... Kootwijk (Holland), 18.1; 12 p.m. to 1 a.m., every Thursday.

THE Outward Beauty of UDISCO is Truly Indicative of its Excellance

Beneath the beautiful cabinet-work of the 1928 Udisco is the finest radio receiver that modern radio engineering skill has yet devised. Because UDISCO builds receivers expressly for Australian conditions; because they give such wonderful performances under almost any conditions; because they are so flexible—so responsive—yet so powerful—the Australian public have accepted the Udisco Line—and proclaimed it "MASTER OF THE AIR."

DISTANCE—As you've never known it!

Do you know what it is to tune in five stations in ten seconds? Do you receive New Zealand stations regularly on the speaker? Can you tune in all the "B" class stations? With a UDISCO L5 we guarantee

reception of all "A" and "B" class stations at splendid volume. No other five can perform as can the UDISCO L5, simply because no other set features the Udisco Super-Neut. circuit.

SELECTIVITY—As you've only imagined it!

The Udisco owner is never troubled with interfering stations, he never has to bother with fiddling wave-traps. He selects his station quickly and surely—even

if he operates his receiver 200 yards from the local station. Although selectivity is so extremely keen, volume or tone is in no way impaired.

TONAL PURITY—As you've always wanted it!

Udisco has always given a faithful reproduction of good music, but with the new improved type transformers embodied in the 1928 model, tone quality has

been lifted to a supreme standard of excellence. Hear a programme on a UDISCO—then try to be content with anything but a UDISCO!

SIMPLICITY

The simple one-dial control makes tuning mere child's play. Rotate this control slowly, and station follows station in quick succession for you to choose the entertainment you like best. "Switching over" is the work of an instant.

ECONOMY

The Udisco L5 consumes LESS battery current than the average THREE-VALVE Receiver. It operates with equal efficiency from wet or dry batteries. In centres where battery charging is an important aspect of wireless operation, this feature makes a strong appeal.

BEAUTY

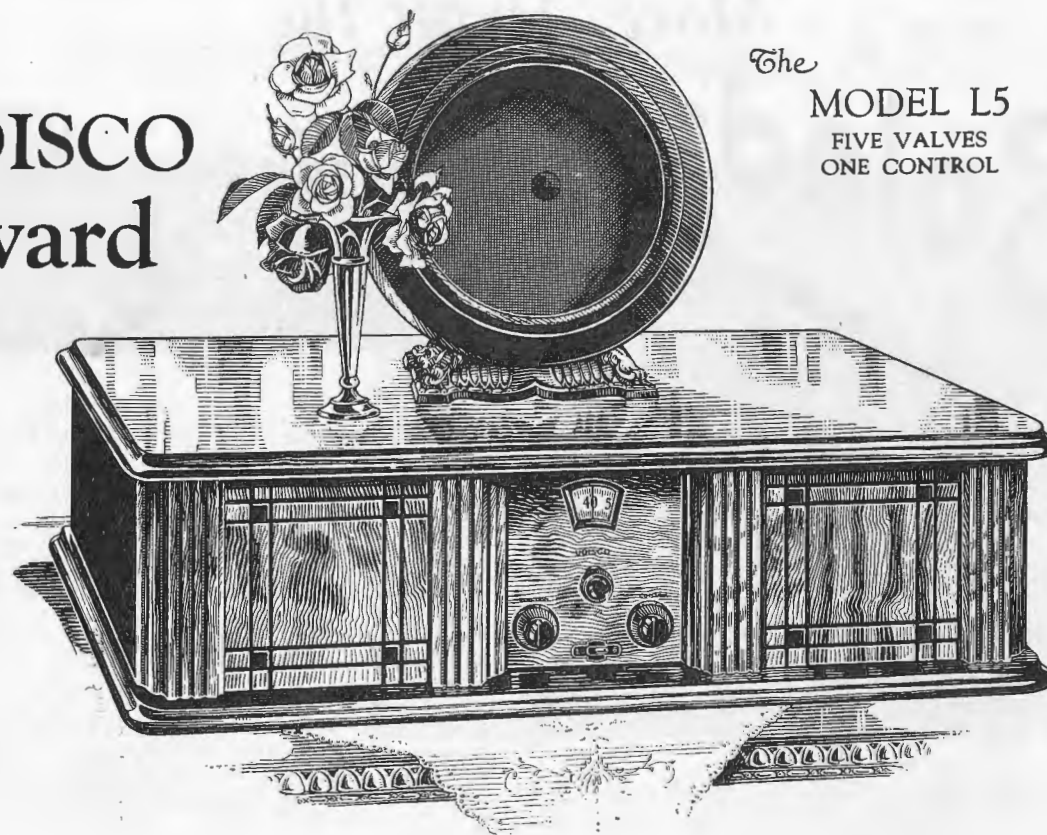
The simple beauty of the new cabinets is everywhere admired. Neatly panelled of maple in two tones, with controls grouped into a centre recess, the front view of the 1928 Udisco models breathes refinement. The tuning dial is automatically and indirectly illuminated when the receiver is in use.

Udisco Receivers are Sold on a Money-back Guarantee of Satisfaction

J We guarantee every UDISCO receiver to perform up to our advertised claims; if it does not we will refund every penny of the purchase price. Buy the set, operate it for a week or two and if you are not satisfied, ask for your money back.

PUT OUR UNIQUE OFFER TO THE TEST—WRITE TO-DAY.

UDISCO Inward



The MODEL L5
FIVE VALVES
ONE CONTROL

The New Lower Price Makes UDISCO To-day's Best Radio Value!

At the old price of £47/10/- Udisco L5 was a "good buy". To-day, with all its added refinements, the 1928 Udisco sells at fifty shillings less than formerly.

Udisco's huge output alone makes this possible. Value for value, quality for quality, you cannot get more for your money than Udisco offers in this beautiful 1928 model.

Complete with Clyde Accumulator, two heavy-duty Ray-O-Vac Batteries, "C" Batteries, Best Quality Loudspeaker, Aerial and Earth Equipment.

£45

With Dry Cell Equipment the price is £42/10/-.
Set and Valves only £30

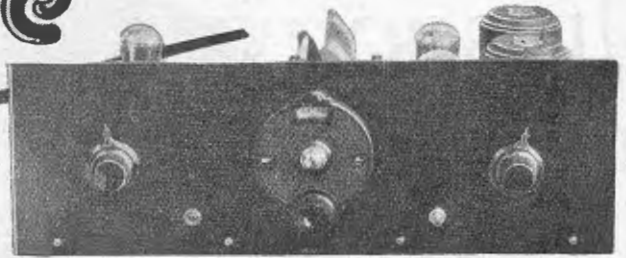
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More About the Solodyne



(By the Technical Editor.)

The interest aroused by the publication of our Solodyne article in the March issue has far exceeded our most optimistic expectations. Apparently it was just what many of our readers were waiting for, and we have received quite a large number of letters, both from those who already have built the receiver, and also many more from those who intend to construct the set in the near future.

However, judging from several queries which we have received, there are one or two points which we did not sufficiently explain, and in this short article we will deal with them, and also with several other little things which have occurred to us since the constructional article was written.

Type of Valves.

First, regarding the matter of valves. Just because the set described and illustrated was fitted with Mullard P.M.-5 and P.M.-256 valves, was no reason why these particular valves should be regarded as unchangeable, excellent though they are. Any good make of valve may be used successfully, provided suitable types are chosen, and a set of valves which works well in one five-valve set certainly will give good results in the Solodyne.

We have been asked if "four-volt" valves will operate satisfactorily. Certainly they will, and so will "dry cell" valves, for that matter. The right thing to do is to use whatever valves will be most convenient for your particular case, remembering that the larger valves usually give some slight gain in volume, particularly in the audio end. The selection of valves is governed, as a general rule, largely by the facilities at hand for battery-charging; naturally, the larger valves consume more current, and, for that reason, are out of the question for some people.

One country reader asks about substituting rheostats for the "Tempryte" automatic filament controls. This is perfectly feasible if one does not mind the presence of four extra knobs on the panel, but, in our reply to him (via the medium of our "Questions Answered" page) we suggested the use of one rheostat only, connected in the negative filament line, in order to provide a means of compensating for the voltage-drop which occurs after our friend's "Carboncell" "A" battery has been switched on for a time. In actual effect, this master-rheostat will enable one to regulate matters so that a constant battery voltage is applied to the set at all times. Actually, it will allow the

conditions applying to the use of an accumulator to be closely approximated.

Aerials.

Now, with reference to aerials. The Solodyne is not at all fussy where the question of dimensions or type of aerial is involved. The only form of energy-collector to which it is not partial is the loop or frame aerial, and that is because the circuit is **not** designed for operation with that type of aerial. On an indoor aerial, however, the Solodyne makes a very good showing indeed. One composed of about thirty feet of wire (more if possible), strung round the picture-rail, through the house, or back and forth across the room is quite a good proposition for summer-time reception, or at any time when static is troublesome. Bear in mind, though, that loudest response and greatest distance will be secured with a large aerial—just as with any other receiver. You see, the Solodyne is **not** revolutionary in principle, as we made quite clear in our article; it follows quite well-established precedents, and behaves exactly like any other respectable five-valve receiver would be expected to do. Its chief claim to our attention is that the design is such that the efficiency of the circuit is very high indeed—much higher than that of the usual five-valve circuit.

Can a different make of three-gang condenser be used in place of the Cyldon "Logquadline" incorporated in our set? This is problematical, for reasons which will be explained. We took no chances in our selection of a three-gang condenser, for the make mentioned was designed specifically for the Solodyne, and constructed to the requirements of the originator of the circuit, Mr. J. H. Reynor, of Elstree Laboratories, England.

The design of the plates of this condenser is such that it obeys a true logarithmic law, resulting in a capacity curve lying in between that of a square-law and an S.L.F. condenser. This condition is important, in that it permits the three tuned circuits to be accurately matched, even though the coils are not quite uniform. If two circuits having entirely different inductances are tuned by logarithmic condensers to a given wavelength, and if the circuits are then both tuned to another wavelength, the difference in dial readings will be the same in both condensers. That is, if one condenser has to be moved 20 degrees, the other condenser will have to be moved 20 degrees

(Continued on Page 49.)

Broadcasting Capt. Hinkler, A.F.C.



RIGHT from the moment Capt. Hinkler touched Australian soil at Darwin, radio listeners have been kept well informed of his every movement.

Station 4QG rendered a splendid service, not only the listeners of Queensland, but of Australia, in broadcasting Hinkler's arrival at his home town, the various welcomes there, besides the numerous functions that were accorded the gallant airman in Brisbane.

Programmes were cast to the winds. Capt. Hinkler literally commandeered 4QG and "ruled" the waves" during his memorable visit to Brisbane.

One of the notable feats in connection with the broadcasting side of Hinkler's arrival, was 3LO's effort to serve the listeners of Victoria. Studio manager, engineers, and a photographer were dispatched post-haste from 3LO Melbourne so as to reach Bundaberg in time for the airman's landing. Arrangements were then completed for one of the long-



Capt. Hinkler, A.F.C., and his mother speaking from Bundaberg to 3LO.



Capt. Hinkler, A.F.C., talks into 3LO's microphone shortly after his landing at Bundaberg. The Mayor of Bundaberg is seen at the right of the picture.

est land-line relays ever attempted in Australia. Capt. Hinkler spoke into 3LO's microphone at Bundaberg; his voice was carried over 1500 miles of land-line to the transmitters in Melbourne, and broadcast, thus enabling even the crystal-set owner of that city to enjoy the privilege of hearing Capt. Hinkler and his mother speak from their home town. This was truly a commendable piece of service by 3LO.

The great ovation accorded the airman in the South did not lack any of the enthusiasm which marked his welcomes in his own State. He has been feted everywhere, and all the while fond Queenslanders have been following his movements through the broadcasts of 2FC and 3LO.

Although 4QG* listeners were privileged to hear Capt. Hinkler's voice in his replies to the many welcoming functions, and during his short visit to 4QG, we are looking forward to his return to Queensland when we hope to hear his quiet, unassuming voice once more over the air.

New Bedtime Storyteller at 4QG



UNCLE PETE

Here you see Mr. Harry Collins, of Brisbane, recently appointed Deputy-Ancouncer at Station 4QG.

In addition to his announcing duties, Mr. Collins is to take the role of "Uncle Pete" upon Tuesday's and Saturday's bedtime story sessions. Tuesday will be Uncle Pete's own night, and he will occasionally be assisted by Uncle Ben. On Saturday night Uncle Pete is to join Uncle Ben & Co. in their famous entertainments for the children.

Mr. Harry Collins is an artist of many years' experience, and by what we hear, is one of the cleverest nigger impersonators in this country. He has toured all the South Sea Islands, Fiji, Somoa, Tonga, with his own vaudeville shows. As a clever composer, a versatile musician, and a great entertainer, Uncle Pete should never be at a loss for something to sing, play, or tell to the children.

OREGON WIRELESS MASTS

IN 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.

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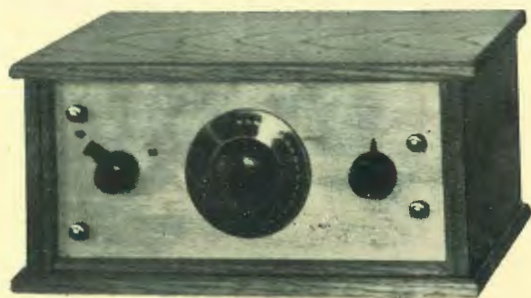
The "LUXOR" Line of RADIO RECEIVERS

*Easier Tuning, Greater Range, Definite Selectivity
and Incomparable Tonal Quality*

In announcing "LUXOR" Radio Sets, the distributors particularly desire to stress the point that an entirely new circuit is employed—a circuit that has just been perfected for commercial reception, and a circuit that is not to be had in any but a "LUXOR" Set.

So definite were the claims for "LUXOR" superiority that, before placing on the market, the distributors made exhaustive comparisons with every other circuit. They found, as you will find, that "LUXOR" opens a new realm in radio reception and, under similar conditions, will far outshine any contemporary receiver.

"LUXOR" uses balanced tuned Radio-Frequency, giving remarkable volume with smoothness of control over the full broadcasting range without squealing or howling under any condition of tuning—the stations simply glide in; no other description can explain the way "LUXOR" Sets tune. Hear a "LUXOR" before you decide on your next set.



'Luxor' Standard Table Three

A Real Standard Three-Valve Set in a really presentable Cabinet. Built of standard British and Australian components, like Ormond Condensers and Emmco Transformers for Australian conditions. More than average selectivity, powerful volume and good reproduction.

Retail Price £7-17-6

(WITHOUT EQUIPMENT).

"LUXOR" Sets are produced in Queensland for Australian Broadcasting conditions, and are not to be confused with out-of-date American sets which are dumped here and sold at "any price" to clear.

"LUXOR" Construction and Components are guaranteed 12 months with free replacement of any faulty parts on return to the office of the distributors.

Equipment Recommended for Complete Outfit

Two Mullard P.M.1 L.F. A.B. Valves at 9/6	£0 19 0
One Mullard P.M.2 A.B. Valve at 9/6	0 9 6
One 20/40 Glass Cell Accumulator at 16/	0 16 0
One Ripaults 60v. H.T. Battery at 18/9	0 18 9
Aerial and Earth Equipment at 7/9	0 7 9
One Fellows Junior Loudspeaker at 27/6	1 7 6
	£4 18 6

[OVER]

THE "LUXOR" LINE OF RADIO RECEIVERS



"Luxor" Standard Table Five

A Real Standard Five-Valve Set in a really presentable cabinet furnished in good taste. Built of standard British and Australian components like Ormond Condensers and Emmco Transformers for Australian conditions. Selectivity is excellent, will give southern stations full strength without wave-trap while local station on the air at two miles' air-line. Full volume on all main stations and good quality reproduction. No squeals or howls on any settings.

Retail Price £13-10-0

(WITHOUT EQUIPMENT).

Equipment Recommended for Complete Outfit

4 Mullard P.M.1 A.B. Valves at 9/6	£1 18 0
1 Mullard P.M.252 A.B. Valve at 15/	0 15 0
1 30/60 Glass Cell Accumulator ...	1 1 0
2 Deal 45v. Heavy Duty H.T. Battery (90v.) at 22/6	2 5 0
1 Deal 4.5v. Grid Battery	0 3 3
Aerial and Earth Equipment	0 7 9
1 Amplion A.R.100 Cabinette Speaker	2 10 0
	£9 0 0

"Luxor" Standard Console Five

A Real Standard Five-Valve Set in a really fine upstanding Console Cabinet beautifully finished. Built of standard British and Australian components like Ormond Condensers and Emmco Transformers for Australian conditions. Selectivity is excellent, will give southern stations full strength without wave-trap while local station on the air at two miles air-line. Full volume on all main stations and good quality reproduction. No squeals or howls on any settings.



Retail Price £29-17-6

(WITHOUT EQUIPMENT).

Equipment Recommended for Complete Outfit

Four Mullard P.M.1 A.B. Valves at 9/6	£1 18 0
One Mullard P.M.252 A.B. Valve at 15/	0 15 0
One 30/60 Glass Cell Accumulator at 21/	1 1 0
Two Deal 45v. Heavy Duty H.T. Batteries (90v.) at 22/6	2 5 0
One Deal 4.5v. Grid Battery at 3/3	0 3 3
Aerial and Earth Equipment at 7/9	0 7 9
One Amplion A.R.100 Cabinette Speaker at 50/	2 10 0
	£9 0 0

Luxor Receivers are so perfectly balanced that it is impossible to make them howl or "squeal".

£9 0 0

THE "LUXOR" LINE OF RADIO RECEIVERS



The "Luxor"
Luxury
Table Five

As the name implies, a **Splendid Quality Set** of highest class British and Australian parts. Emmco Drum-control Dials and Condensers, Telsen Transformers, Radiokes T.R.F. Transformers, nicely finished cabinet of good appearance. Selectivity, no wave-trap required for southern station at full strength with local station on the air within two miles. Beautiful tone, clarity and quality and full volume.

Retail Price
£29-17-6

(WITHOUT EQUIPMENT).

Equipment Recommended for Complete Outfit

Three Mullard P.M.3 U.X. Valves at 13/6	£2 0 0
Two Mullard P.M.4 U.X. Valves at 13/6	1 7 0
Two 30/60 Glass Cell Accumulators at 21/	2 2 0
Two Deal 45v. Heavy Duty H.T. Batteries (90 volts) at 22/6	2 5 0
One Deal 4.5 Grid Battery at 3/3	0 3 3
Aerial and Earth Equipment at 7/9	0 7 9
One B.T.H. Type C-2 Speaker at 95/	4 15 0

£13 0 6

"LUXOR" Receivers at last make Radio Reception a real pleasure

They enable you to cover vast distances—reach out to stations you desire to listen to—and they tune those stations without fuss or trouble. Make plans now to have a "LUXOR" Receiver demonstrated in your own home.

[OVER]

THE "LUXOR" LINE OF RADIO RECEIVERS



The "Luxor"
Luxury
Console Five

A Splendid Quality Set built into a really beautiful model console cabinet. Closing double doors over controls and chamber. Built of highest-class British and Australian parts. Emmco Drum-control Dials and Condensers, Telsen Transformers, Radiokes T.R.F. Transformers. Selectivity, no wave trap-required for southern stations at full strength, with local station on the air within two miles. Beautiful tone, clarity and quality, and full volume.

Retail Price
£39-17-6

(WITHOUT EQUIPMENT).

Equipment Recommended for Complete Outfit

Three Mullard P.M.3 U.X. Valves at 13/6	£2 0 6
Two Mullard P.M.4 U.X. Valves at 13/6	1 7 0
Two 30/60 Glass Cell Accumulators at 21/	2 2 0
Two Deal 45v. Heavy Duty H.T. Batteries (90 volts) at 22/6	2 5 0
One Deal 4.5v. Grid Battery at 3/3	0 3 3
Aerial and Earth Equipment at 7/9	0 7 9
One B.T.H. Type C-2 Speaker at 95/	4 15 0

£13 0 6

*The "Luxor" will make you dissatisfied with your present Receiver.
It gives a New Meaning to Perfect Radio Reception.*

All Models of "LUXOR" Receivers can be purchased from the leading radio dealers throughout the State. Demonstrations arranged to suit your convenience.

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WHOLESALE DISTRIBUTORS OF "LUXOR" RADIO RECEIVERS



(By Robert Ware.)

A thrilling series of Secret Service yarns—built around actual incidents during the Great World War—
and told in a manner that grips your interest.

Episode No. 2—“THE LEAKAGE”

I.

“Shades of Caesar!” gasped Hilton. “Twenty ships sunk by enemy submarines since this morning! Are you sure, sir, there isn’t a mistake?”

The Prime Minister of England looked straight at the bronzed, broad-shouldered naval officer seated before him, and shook his head sadly.

“No, my boy—twenty to-day, which makes sixty-eight in the past seven days. We simply cannot afford to lose our ships at that rate—that’s why I sent for you,” he said slowly. “Admiral Cross is striving with all his power to provide more escorts for our merchantmen, but the constant demands of the Channel and the North Sea leave him with a deplorable shortage of material. Immediately a sloop or destroyer is commissioned, she is needed on one of these patrols. It is the Admiral’s belief,” he continued, “that you are the only man who can help us at the present moment. In spite of repeated changes in the method of routing our vessels across the Atlantic, 90 per cent of the sinkings are ships which leave the United States.

“It’s a knotty problem to set you, my boy, but something **must** be done and done very quickly—or we shall be in a very bad way.”

The Chief of Britain’s Naval Intelligence Service looked gravely at the First Commoner in the Land. “Frankly, sir,” he said quietly, “Admiral Cross believes that there is a leakage regarding the routes traversed by our ships from American ports.”

“Yes,” replied the older man succinctly.

“Very well, sir, give the N.I.D. seven days, and I’ll promise we’ll have the leak plugged,” returned Hilton as he rose, saluted and withdrew.

II.

“Any news, sir?” The eager words leaped from the excited third mate who stood at the head of the gangway.

“Sealed orders, my son, I don’t even know myself where we’re bound for,” replied the old man affectionately, as he returned the junior’s salute. “Tell Mr. Gregory the tugs will be here at noon, and that I wish to see him immediately,” he added as he crossed towards the saloon doorway.

“Very good, sir.”

The “Third” went aft. He knew he would find the Chief Officer deeply absorbed in heated debate

with the Naval Ratings who manned the 4.7, which was mounted on the stern of the “War Maiden.”

“Capt’n’s aboard, Mr. Gregory, and wants to see you,” piped the “Third.” “He says to get everything ready—the tugs are coming at noon.”

Loth to leave an argument in which he revelled, the First Mate reluctantly rose to his feet.

“Ten thousand yards, with that pop-gun,” he snorted, “never in the creation of cats!”

The Naval gunners laughed heartily as he descended to the main deck, for their gun already had a couple of German submarines to its credit, and had actually demonstrated its superiority over the six-inch guns which were usually carried by the U-boats. The Chief Officer was not at all in an ill-humour as he made his way forward—for the “War Maiden” was what is known as a “happy ship.”

Built at top speed, and launched in a hurry, the “War Maiden” was one of the standardised war-time merchantmen which helped so greatly to save Britain and the Empire during the ruthless submarine campaign which Grand Admiral Tirpitz and the whole of Germany implicitly believed, would bring the Mistress of the Seas to her knees.

Captain Evans—Master of the “War Maiden”—was an old reservist. A typical, tight-lipped old salt, he was full of courage and treated his officers and crew in a gentlemanly way—two qualities which are all that are necessary to secure loyalty and obedience from practically any British seaman.

Thus it was that the “War Maiden” pushed her way across the broad Atlantic at ten knots—armed with a single gun and a couple of recently installed “smoke boxes”—but animated with a spirit that would have defied anything belonging to the enemy, whether it was on the water, under the water, or above the water.

III.

“Follow the fifty-ninth parallel of latitude until you are fifteen degrees west. When at that position report by wireless to Innistrahull, who will arrange for your escort through the danger zone and advise you of your rendezvous.”

Those were the concluding instructions in the sealed orders.

“We should be there about daybreak to-morrow,” said Commander Evans to his Chief Officer as they plotted their noon position in the chart-room.

"Should we start zig-zagging as soon as we get there, sir?" queried Gregory.

"Oh, I don't know. We won't be in the official danger zone then, but still, perhaps it might be advisable," was the Commander's thoughtful reply as he went out.

The "War Maiden" had been pushing her way through head seas for some days past, averaging about 180 miles daily instead of her usual 240—and this was a dangerously low speed if they did happen to meet an enemy submarine.

The sea was unusually heavy that afternoon, and the night proved very 'dirty,' consequently, the "War Maiden" was many miles from her stipulated position at daybreak.

At breakfast, however, the Captain handed the Senior Wireless Operator a message for Innistrhull, advising his need for additional directions—gave instructions for its despatch at about 11 o'clock—and gave orders to zig-zag.

With the passing of time the sea moderated considerably and the sun shone out brightly—a fact which immediately raised the spirits of everybody.

The "look-out" in the "crow's nest" expanded himself to the energising rays of sunshine and screwed up his eyes as he scanned the glittering sea. The officer on watch cast off his heavy bridge-coat and his forebodings of danger at the same time. One gunner assumed his look-out position while his mate sat comfortably by the gun and smoked his beloved pipe.

What a long way off "the war" seemed on this lovely, sunny morning. Why, the "War Maiden" couldn't plough her way through more contented seas in peace time. The only abnormal thing was the wake. First a short "leg" to port, then a long "leg" at 90 degrees to starboard. After this another 90 degree turn to port until up to the normal course, then straight for a short "leg." It was tremendously fascinating, but its meaning quite out of tune with Nature.

The "War Maiden" had just completed the long starboard "leg" and was swinging to a course at right angles, when a weird, strangled scream broke from the whistle, and a heart-stopping sizzle streaked the surface of the water under the very noses of the gunners.

"Ye Gods, a torpedo!" yelled the gunner on watch, and his mate slammed a shell into the 4.7.

The "look-out" and the officer on watch had seen the tell-tale line of bubbles simultaneously, and the latter had grabbed the whistle lanyard to warn all on board of the danger, but the turn of the zig-zag saved the "War Maiden" and the torpedo passed astern, missing by feet only.

All eyes swung along the clearly defined track of bubbles and saw the periscope of an enemy submarine barely half-a-mile distant. Instantly the gun was trained and fired, but the "War Maiden" and the U-boat were drawing apart quickly, and, a periscope is a very small target.

The submarine, having missed with its torpedo, dropped astern rapidly and rose to the surface to bring her guns into action. Captain Evans' commands came like shots from a machine-gun.

"Mr. Gregory, get the 'smoke-boxes' going. Tell the boys to fix the hoses and let the boys carry up ammunition. 'Second,' you keep a sharp look-out on the after

bridge, these chaps generally hunt in pairs. 'Third,' you stay on the bridge with me and keep a good look-out also. Quartermaster, tell the Wireless Officer to report that we are attacked; he has our approximate position in that message I gave him."

Each one ran to do his bidding, and soon the gun was hurling shells at the hostile craft with great vigour, and enemy high-explosive shells were bursting all round the "War Maiden."

The wireless spark was zipping "S.O.S., S.O.S., S.O.S. War Maiden attacked by enemy submarine 59 north 15 west, torpedo missed, gunfire proceeding."

A thin trickle of creamy smoke issued from the stern of the merchantman, hung a few feet above the water, and then dispersed. The "smoke screen" was a dismal failure.

Higher and higher rose the muzzle of the hard-hitting little 4.7 as the U-boat dropped further back, seeking to out-range the Britisher with her own six-inch guns. But, although the German shells fell around the "War Maiden," the 4.7 kept dropping shells uncomfortably near the submarine.

Nine thousand three hundred yards, 9500 yards, 9600 yards—and nearly a hit.

"Up a bit more and you'll get her," yelled the second mate from his point of vantage.

Excitement reached fever heat, and the 4.7 looked like an anti-aircraft gun, when a terrific explosion made the "War Maiden" rear like a wounded animal, and a mountain of water as high as the "crow's nest" fell on her decks, and she sagged with a rapidly increasing list to port.

A look of utter unbelief was in the Britishers' eyes as they turned to see what new antagonist had struck them, and, for a moment, they were rooted where they stood as a huge "Super-Deutschland" submarine slowly broke the surface about five hundred yards distant on the port quarter, and proceeded to a position dead ahead of the rapidly sinking vessel. The second enemy submarine had approached unobserved and dealt the death blow.

The two gunners, with an oath, tried to bring the gun to bear, but the "War Maiden" was well down at the head and had a heavy list to port, and the cunning German commander had reached an inaccessible position.

"Lower away the boats!" commanded Captain Evans as he turned to the chart-room to gather up his lead-weighted code books. Coming down the ladder he heard the wireless spark, and, walking to the door of the wireless cabin, felt an extra thrill of pride in his nationhood.

The Senior Wireless Operator, with a life-belt at his feet, was steadily sending out his final message.

"S.O.S., S.O.S., S.O.S., War Maiden torpedoed and sinking rapidly; same position as before. S.O.S., S.O.S., S.O.S., War Maiden torpedoed and sinking rap."

The spark would not now come to the clicking of the operating key, and, with a strained smile, the young man turned to his captain and said quietly, "Can't do any more, sir."

The "old man" stretched out his arm and put it round the shoulders of the junior—and they walked across the sloping deck to where a life-boat was waiting for them—the last two to leave.

Pulling strongly, the men got the boats well away before the stricken "War Maiden" gave a final forward lurch and slowly disappeared out of sight.

IV.

By instinct, the survivors gathered together as the larger U-boat slowly came towards them. Now, in full view, she was an imposing sight as she leisurely drew nearer. Her bows were as high as those of a light cruiser, and were equipped with curved cutters which could sever a wire hawser. The six inch guns—one on each side of the conning tower—looked dangerous, while from the conning tower itself peeped a wicked machine-gun.

Gradually she drew alongside the boat in which Captain Evans had risen to his feet, and the German commander—stepping in front of his officers—greeted him in perfect English.

"Good morning, Captain Evans," he shouted, "you are very late in arriving here. I've been waiting for you since yesterday morning. I'm glad you didn't hit my assistant, I would have been annoyed had you done so. One of your destroyers is now on her way to pick you up, so I shall have to leave you. Please convey my regards to Commander Hilton at the Admiralty. Au revoir," and, with a mocking laugh, he turned and descended into the interior of his sea-monster.

When all the Germans had followed their commander, the "Super-Deutschland" quickly submerged. Soon all that could be seen of her was her twin periscope which enabled her to see and yet remain unseen.

V.

When the weather-beaten old man had finished his recital, Hilton's eyes grew hard and merciless.

"Capt. Evans," he said quietly, with true Prussian egotism, that U-boat commander confirmed an awful suspicion which we at Headquarters had scarcely dared to entertain."

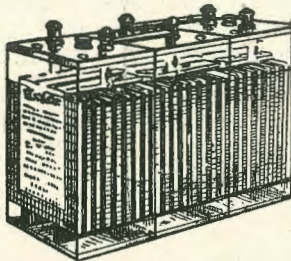
"Last night, however, Lord X, the Prime Minister, put the terrible thought into words, and we mentally shuddered at the picture. Now, less than twelve hours later, you come and tell me that what we dreaded is, indeed, an actual menace in active operation. I shall leave for Scotland immediately, I always seem to make my luckiest guesses there. Good-bye Captain, and, the N.I.D. thanks you."

VI.

Hilton's arrival at Doncar threw the whole staff into a frenzy of excitement and enthusiasm.

"Wonder what the Chief's chasing this time?" was the question which hammered in every brain.

This little forest of masts on the lonely Scottish coast, miles away from civilisation, was the strategical centre of the Wireless Interception Stations which were such a vital part of the British Naval Intelligence Service. Doncar, and its two co-operative listening stations at Scapa Flow and Flamborough, were manned by about fifty expert operators—the cream of the commercial wireless world. Proficient in British signalling, they had studied German codes, prefixes, call signs, suffixes, and "tricks" until no German vessel of any kind—submarine, minelayer, destroyer, battleship, aeroplane, or Zeppelin—could use her wireless



EXIDE Low Tension Wireless Battery, Type CZ

Made up and sold in separate 2-volt units in numerous capacities, the Exide Type C.Z. Low Tension Wireless Batteries are suitable for use with any type of Wireless Valve. Ask for them by name.

Remember that every EXIDE Battery sold has EXIDE SERVICE behind it!

PERFECTED BY EXPERIENCE—

EXIDE Wireless Batteries are assembled in separate celluloid boxes. These boxes as well as the cell lids, are made from special celluloid, because this material has proved to be the best in over 30 years long experience in battery building. It enables the condition of the battery to be ascertained at a glance. It also possesses the advantages of being light, strong, durable, and readily repaired. Ask at your Wireless Store or any EXIDE Dealers for EXIDE Wireless Batteries in Celluloid Boxes.

Exide WIRELESS BATTERIES

New Address:

Adelaide Street (opposite St. John's Cathedral), BRISBANE. Also at Stanley Street, Sth. Brisbane.

The Mullard Master-Valve with the Wonderful P.M. Filament with English or U.X. Base Remains the Same Price - - - - 13/6

BUT
WHILE THE STOCKS LAST
 the following previous types will be sold at reduced prices

- HF and LF Bright Filament 2/- each
- D SERIES 6/- each
- DFA SERIES 7/6 each

with English or U.V. Base

CHARACTERISTICS AS PER THIS TABLE.

Type.	2/- H.F.	2/- L.F.	6/- D06 H.F.	6/- D3 H.F.	6/- D3 Det.
Filament voltage	3.2—3.8	3.2—3.8	3.0	1.8—2.0	1.6—2.0
Filament current, amps.	0.6	0.6	.06	0.3	0.3
Anode voltage	30—90	30—90	50—125	50—125	20—100
Total emission, m/a. ...	5	5	8.0	8.0	8
Impedance, ohms.	90,000	30,000	60,000	60,000	16,000
Purpose	Radio, also Resistance Coupling	Audio	Radio, also Resistance Coupling	Radio, also Resistance Coupling	7/6

Type.	6/- D3 L.F.	6/- MD3	7/6 DFA1	7/6 DFA3	Detector DFA4
Filament voltage	1.8—2.0	1.8—2.0	5.5	5.5—6.0	5.5
Filament current, amps.	0.3	0.3	0.2	.06	0.2
Anode voltage	30—100	30—100	50—100	50—100	75—125
Total emission, m/a. ...	8.0	8.0	25.0	15.0	15.0
Impedance, ohms.	16,000	16,000	8,300	13,000	27,000
Purpose	Audio	Audio	Power Amplifier	Audio	Resistance Coupling

Every Valve is guaranteed to function perfectly.

OBTAINABLE FROM EVERY RADIO DEALER IN AUSTRALIA.

Also from A. Beal Pritchett, Aust. (Ltd.), Sydney. A. Beal Pritchett, Aust. (Ltd.), Melbourne.
 Edgar V. Hudson, Brisbane. Wedma Ltd., Adelaide. Gibbs, Bright & Co., Perth.
 W. & G. Genders, Launceston, Hobart.

Mullard

THE MASTER VALVE

without these young Britishers knowing to whom she was speaking—what she was saying—who she was—and exactly **where** she was.

The latest experiments in wireless engineering were poured into these stations in a constant stream, and harmonic resonators, radio compasses, "sweepers," etc., played a conspicuous part in the equipment of every "little wooden hut."

Ten of these tiny wooden cabins formed the listening station of Doncar—each hut being in the centre of a square formed by four tall, lattice masts which supported an "inverted cone" aerial.

Day in, day out; night in, night out, with never a break, each young Briton kept vigilant watch over a measured section of the ether. Every man had seen two or three years' sea service, actively helping to combat Germany's desperate attempts to starve England. All had experienced German submarine warfare, many having sampled its attendant frightfulness.

Commander Hilton's handful of listeners needed no spur to their nerve-racking labours. Intermittent bombardments from the sea—sporadic bombs, aerial torpedoes and darts from the sky, hurricanes, freezing nights of snow and hail, and, above all, the infernal din from the aerials of myriads of Allied war vessels, 'planes and "blimps"—were considered but trifles when compared with days and nights adrift in open boats without adequate clothing, food and water.

VII.

Convinced that information regarding the movements of British transports was being supplied to the enemy by wireless, double watches were instituted, and receivers with a dozen or more valves, and undreamt of wavelengths, were hastily constructed.

No sound—whether spark or arc—which had the least suspicious note, was left until it had been run to earth, exactly located and accounted for.

The first day and night proved fruitless—likewise the second day. A driving hailstorm ushered in the second night's vigil, as Commander Hilton carried his latest effort into the hut known as "C" station. This set was constructed with an automatic "sweeper" which slowly covered all waves from about five hundred metres to twenty-five thousand, and was the result of a maze of complicated mathematical formula, "junk" and patience.

Quickly the connections were made, and, with beating heart, the operator fixed the headphones and started to "sweep" the air. Commander Hilton sat near him, intense eagerness depicted on his bronzed face, for, he felt sure that this "guess" was to prove successful.

Silent, strained tension reigned for four hours, and then Hilton took the 'phones from the aching ears of his assistant.

At the end of another hour he connected a second pair of telephones, which the operator at once clamped tightly to his head. The two men, scarcely daring to breathe, listened intently to every whistle, squeak or "grunt" which came through as the "sweeper" carried them up and down the huge expanse they sifted.

A cheap, noisy clock, which rested on the table, had just struck midnight when the operator and his Chief gave a startled exclamation and stopped the "sweeper" on eighteen thousand metres. Hilton's hands clenched until the knuckles showed white as he followed the words the younger man slowly wrote—

letter after letter it came—in Morse at 20 words a minute.

"BRIMOTO—10—ANDALUSIAN: N.Y.

**0700 : 3500 : 6000 : 4200 : 5500 : 5500 : 1800 :
10—DELAWARE CHIEF : P : 0930 : 4800 :
4800 : 2900 : 5200 : 1200 : 12 — CLAN MUNRO :
8 : DETURER : 5500 : 4500 : 4600 : 1430 :
11."**

"Business must have been very hard to-day," sardonically remarked Hilton with a grin, "only two departures and one alteration."

"Put the 'D.F.' on the blighter, sir,' he's repeating the message," the operator called excitedly.

A few swift swings on the "direction finder" which was connected to the "sweeper" soon located their quarry.

"Two hundred and twenty-five degrees!" gasped Hilton, "We've caught the original leak at one go. This stuff isn't coming from Germany, it's from the other side of the Atlantic. Expect Bhorkum or Heli-goland will relay it to the 'subs.' at regular intervals."

Returning to the message just received, he saw at a glance that it gave the various positions these vessels had been instructed to make, together with their sailing dates and times, ports of departure and speed. Spreading a pocket chart of the Atlantic on the table, Hilton made a few rapid calculations and found there was ample time in which to warn each ship of the danger ahead.

"Keep 'tab' on that chap whatever happens," he said to the operator, "get every dot he sends and shoot it straight through to the Admiralty. I'm going to get a nearer view of him. Goodnight—or rather—good morning."

(Editor's Note: This fascinating story, which deals with a most critical period of the German submarine campaign, will be concluded next month.)

READERS

The Editor is always pleased to receive suggestions from readers. If there is some feature you would like to see added to QRN— or something you would like taken out—write.



A CROSS in this square denotes that your subscription expires with this issue.

Subscription **6/6** Year

Early April Features from 3LO.

HAWAIIAN AND PLANTATION MINSTRELS.

Features of 3LO programmes during the week of April 2nd, till 7th, will be musical interludes by the Four Coloured Emperors of Harmony and the Hawaiians, Frank and Francis Luiz. The coloured performers will mingle the latest popular hits with dreamy plantation lullabys, and the Hawaiians will transport listeners to the moonlit isles of the Pacific with their quaint and appealing songs and guitar music. Both features should be popular.



"IL TROVATORE" TO BE BROADCAST.

The Studio Orchestra, under the baton of Mr. J. Sutton Crowe, will broadcast the opera "Il Trovatore" from 3LO on the night of Monday, April 2nd. This orchestra specialises in this type of classical music, and listeners are advised to make a special note of the date and time of this performance.



"THE CRUCIFIXION" AT SCOTS' CHURCH.

The Scots Church Choir will render "The Crucifixion" on Tuesday night, April 3rd, and 3LO has arranged to broadcast it.



SPECIAL WEST COUNTRY PROGRAMME.

On Tuesday, April 3rd, 3LO will broadcast a special West Country programme on the occasion of the convention of the Devon, Cornwall and Somerset Associations of Victoria. The president of the association will also deliver a short address on Cornwall.



"OLIVET TO CALVARY."

The Methodist Church Choir, Nicholson Street, will broadcast the inspiring "Olivet to Calvary" on the night of Wednesday, April 4th. The choir will visit the studio for the occasion.



WELSH COMMUNITY SINGING.

Included in the programme to be broadcast from 3LO on Sunday night, April 1st, will be community singing from the Welsh Church.



POPULAR SONORA SUNDAY CONCERTS.

Another of the popular Sonora Sunday afternoon concerts will be broadcast from 3LO from 2 p.m. till 3 p.m. on Sunday, April 1st. Specially selected records are used in these concerts, and include a wide variety of selections. The best records are chosen from latest releases, and gramophone owners are thus assisted very materially in the choice of their new records.

FRANK BEAUREPAIRE'S ADVICE TO SWIMMERS.

There is no one in Australia to-day better qualified to give advice to swimmers than the Australian champion, Frank Beaurepaire.

Winner of a long string of championships in a period of over 30 years of active participation in front rank events, Beaurepaire has amassed a wealth of practical knowledge that no theoretical training can approach.

3LO listeners will therefore be glad to learn that Beaurepaire will talk from the studio on Tuesday, April 3rd, on the subject "Long Distance Swimming and How to Prepare for it." Hints from such an unrivalled authority on the sport at a time when long-distance swimming is so popular should be of particular interest.

A VAGARY OF TIME.

Such is one of time's vagaries that Monday's news is known in London on Sunday night. The news broadcast by 3LO Melbourne during the early morning short-wave session is listened to on the other side of the world 10 hours previously, and incidents are known chronologically before they happen. On the other hand, British news, although transmitted and received simultaneously, is ten hours late when it arrives in the Antipodes. The simplicity of the explanation does not rob the peculiarity of its interest, and to the child mind it is a source of endless thought, besides being an object lesson in chronological reckoning.



SCIENCE AND RADIO.

The spectrum of the sun and stars can be dissected, one colour from the other, until their virtues or disadvantages for use of mankind can be accurately analysed and calculated. It can be ascertained from the colour of the light of the stars what minerals they contain. Their weight and distance can be measured and their movements calculated with precision. Such is the march of science. Soon the phenomena of wireless will be known—fading and distortion will be overcome, and the way opened up for continuous telephonic communication the world over. 3LO Melbourne is doing much to elucidate these problems by conducting a regular short-wave broadcasting service every Monday morning between 4.30 and 6.30 (corresponding to 18.30 to 20.30 G.M.T. Sunday).

They are also carrying out extensive fading and distortion tests besides endowing special research at the Melbourne University. Much valuable data has already been collected, and the importance of the ultimate results cannot be foretold. Sufficient for the day is the satisfaction of taking its place with the foremost wireless stations in the world with the optimistic hope that it will discover the cause of the bug-bears standing in the pathway of radio advancement.

Distorted Reception in the Country

Statement by 4QG

It is very evident, by the numerous letters of complaint that reach 4QG and the press, that in many country districts of Queensland night-time reception from this station is so distorted as to make listening uncomfortable, and at times impossible.

The problems of fading and distortion are not new. Every "A" class station in the Commonwealth is confronted with the same difficulty, although in Queensland, the trouble appears to be more widespread than elsewhere.

According to reports received from those living in the affected areas, the trouble seems to have become much more pronounced during the past six or eight months. Correspondents affirm that the change synchronised with 4QG's announcements that the station was increasing its power.

Recently the Director of 4QG issued a statement to country listeners on the subject of fading and distortion. In this statement the Director pointed out that the blame for the trouble does not lie at the door of 4QG, but rather is it attributable to a set of physical conditions over which neither the station nor the listener has any control.

The following extracts are taken from the official statement:—

The cause of such fading and distortion may be ascribed to "an act of nature," and until such time as methods of transmission and reception are completely revolutionised, there seems no possible chance of the trouble being remedied.

Station 4QG is no exception to the general rule, and in an area of from approximately 80 to 150 miles distant from it, broadcast listeners invariably obtain excellent results during the day time and very distorted signals at night.

The Director or engineer of a station such as 4QG finds it very difficult to explain to the ordinary wireless listener just why this state of affairs should exist. In most cases the listener advises that inter-State stations come through quite clearly on his set, and claims that the fault therefore lies at the door of 4QG. He also, in most cases, generally adds that as the day time reception from 4QG is so good, the fault must be that of the transmitter and that the trouble probably lies in the fact that extra power is used at night time.

It may be of interest to listeners in affected areas to know that these conclusions are hopelessly incorrect. The power used at 4QG does not differ during the day and night transmissions.

The whole of the meters in use at the station during the day and night transmission show exactly the same readings, and there is no increase whatever in the power used at night time. Furthermore, if 4QG were to use power at night which resulted in distortion, the listeners in the metropolitan area would receive the worst form of distortion possible. The fact that metropolitan list-

eners receive a crystal-like signal proves quite conclusively that the power of the station is not at all a factor in the problem.

The cause of distortion over certain areas is one which has exercised the minds of the world's leading scientists during the past few years, and in spite of the fact that many expeditions have collected careful data regarding the matter, and that much money has been spent in scientific research, only an unproved theory has as yet been put forward to explain the puzzling problem.

At a distance of from 80 to 150 miles from every "A" class station it is practically impossible to obtain good reception, except on occasional nights. In Victoria listeners situated at a distance of 80 to 150 miles from 3LO find it impossible to receive from that station once darkness has fallen, but are able to hear 4QG quite excellently. In New South Wales, districts 80 to 150 miles from 2FC and 2BL experience bad distortion at night, but are able to hear 3LO or 4QG excellently. Similarly in Queensland listeners living 80 to 150 miles from 4QG are unable to receive their own station, whilst 3LO and 2FC come through quite clearly.

Expeditions have collected detailed reports in various country centres in each State, and without an exception reports of all investigators are alike—bad distortion 80 to 150 miles from each station.

The matter was inquired into very fully by the recent Royal Commission which investigated all branches of wireless in the Commonwealth, but that body was able only to face the fact that this type of distortion does occur and was not able to make any recommendations which would overcome the trouble.

Modern science has advanced the theory that a wave emitted from a station such as 4QG is in two parts. One portion travels along the surface of the earth, and the other portions moves upwards through the atmosphere. Situated at a certain distance above the earth's surface, that distance being governed by atmospheric conditions, there exists a layer of rarified electrified air, known as the Heaviside layer. On the atmospheric component of the wave meeting this layer, it is refracted to earth, meeting the ground at a distance of 80 to 150 miles from the transmitting station. This refracted wave interferes with the earth portion of the emitted wave, and thus gives rise to interference in the form of a heterodyne effect.

The various seasons of the year govern the height of this layer of electrified air above the earth's crust, and thus make it quite possible that in some centres during certain portions of the year reception from a nearby station is excellent, whilst at other times (due to a change in atmospheric temperature) bad distortion takes place.

The broadcasting manager or engineer can do very little to assist the listener in an affected area.

The problem is a difficult one. It is a source of anxiety to the manager of a broadcasting station, whose one desire is to give the public an excellent service, and it is a source of worry to the listener who has paid a license fee and desires to hear the local station.

As stated previously, however, it is a matter which only time and future development may solve.

It is interesting to observe that the statement sets out that the area of distortion (according to wide observations) is generally located at from 80 to 150 miles from the station. It would appear that in Queensland the affected area assumes far greater proportions than those specified, for we have received reports of distortion from readers as far North as Proserpine (approximately 600 miles air line), and as near as Southport (approximately 30 miles).

It is indeed difficult to imagine that the fault of the trouble should emanate from a modern broadcasting station such as 4QG, where both equipment and engineering skill are on a par with any other "A" class broadcasting station.

The fact that distortion exists only during the hours of darkness and not in daylight hours supports the Director's theory that the trouble is an "act of nature." Yet the fact remains that country listeners are not getting the service from their own station that their license fee entitles them to.

In fairness to these good people, and in the interests of radio progress, some important step of investigation should be taken—and taken quickly.

Commonwealth and State should unite in conducting extensive tests throughout Queensland, and give country license-payers the satisfaction of knowing that at least some effort is being put forward to diagnose the trouble.

TO COUNTRY READERS.

A very complete article on the distortion problem is now in course of preparation which we hope to publish in our next issue. Extensive data is being collected and observations are being taken. We ask our readers living in the affected areas to co-operate with us by sending in their answers **immediately** to the questionnaire published below.

This request applies only to readers living over 20 miles from 4QG. Readers are asked to make their answers brief and to the point, and to mark their envelopes "Distortion Observations," "The Queensland Radio News," Box 1095N, G.P.O., Brisbane.

QUESTIONNAIRE.

- (1) How many air-line miles separate you from 4QG?
- (2) Do you receive 4QG in daylight; if so with what quality?
- (3) At approximately what hour does distortion make itself evident?
- (4) Since what date has this distortion been noticed?
- (5) Does reception from other stations (particularly 5CL) suffer distortion?
- (6) Are you consistently troubled with distortion, or do you find some nights better than others?

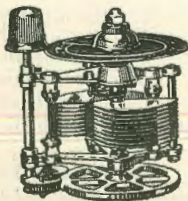
Readers are asked to send in their replies so as to reach this office by the 15th April.

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Sq. Law Condensers

These Condensers have a high maximum to minimum capacity ratio. The novel slow movement has a ratio of 7 to 1; it is very smooth in operation and allows no back-lash or grating.



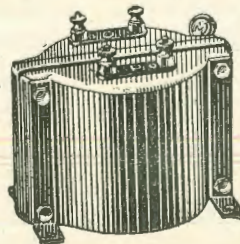
The moving vanes are so mounted that there can be no side-play; they are attached permanently to the framework with a flexible connection.

Highly serviceable for multi-stage, straight and superheterodyne receivers. Made in three capacities: .00025 mfd., .0005 mfd., .001 mfd.

STERLING "SUPER" TRANSFORMERS

guaranteed to amplify without distortion at all frequencies. Each transformer is subjected to a series of exacting tests and is impregnated with a specially prepared insulating medium called "Marconite" which protects the windings from breakdown and corrosion. Every transformer is unconditionally guaranteed for a year from the date of purchase.

Supplied in Four Ratios:



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STERLING L. F. CHOKE

Can be used for choke capacity coupled low-frequency amplification and will give excellent and distortionless performance; also for smoothing purposes in connection with high tension supply units, and will carry a current of up to 30 milliampres for mounting. Fitted with reversible feet so that the instrument can be mounted in the most suitable direction.



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As a draught horse recovers its brute strength while resting after a long, strong pull, so do YALE "B" Batteries *rebuild their depleted power* when your set is switched off for the night. That is why YALE Batteries deliver more power in the long run—why, in the end, they cost *less* per radio hour! Connect with YALE!

If your local dealer can't supply you, write direct to the wholesale distributors. Mention your local dealer's name, and we will pay freight.

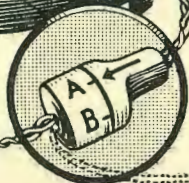
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Philips Introduce-

A COMBINED "A" & "B" ACCUMULATOR CHARGER



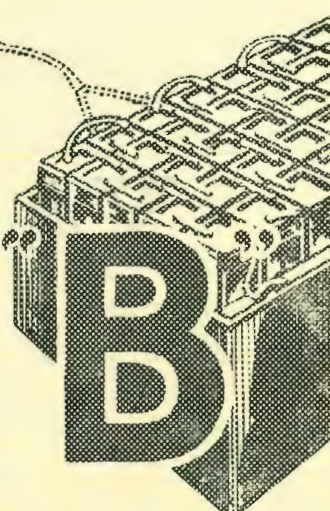
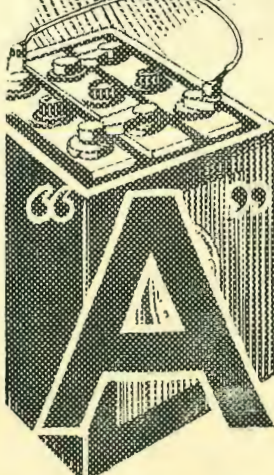
AND now comes still another Philips Battery Charger—this time to aid the man who has both accumulator "A" and "B" Batteries.

We make no sensational claims for the No. 1009, but merely say that it is an honest to goodness Charger that will keep both accumulators in first-class trim, —year in, year out.

Of course all the features of the by-now famous "FOUR-FIFTY" are incorporated.

A unique switching device, by which at a turn of the wrist, "A" or "B" battery is charged at will, lends simplicity to its other sterling qualities.

Let your nearest Radio Dealer give you further particulars.



SOLD BY EVERY RADIO DEALER

PHILIPS

RADIO APPARATUS

8R15

UP WITH THE SIGNALS - DOWN WITH THE PRICE

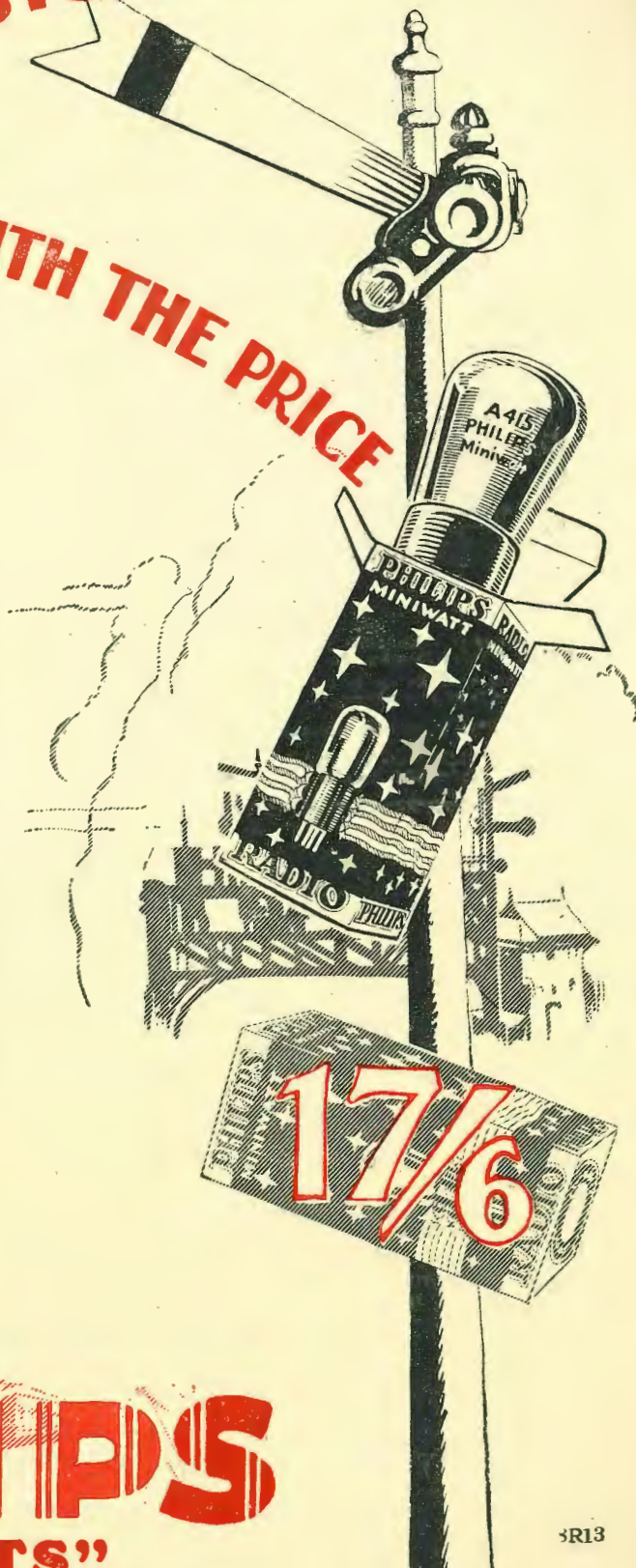
THE "FOUR FIFTEEN" NEW 17/6

THE Chief Engineer of 2BL says:—
"There is no better Detector than the Philips "FOUR-FIFTEEN."

The significance of a Super-Detector is plainly apparent to every Radio Set owner. By its use, distant Stations come through loud and clear, and new Stations are logged right round the dial.

It is a magnificent 1st stage Audio Amplifier, too! and when used with a 3 to 1 ratio transformer of good quality—gives a "step-up" of 45 per stage—without a trace of distortion. In fact, it improves tone beyond conception.

It pleases us to be able to now offer this Super Valve at the NEW PRICE of 17/6.



PHILIPS

"MINIWATTS"

8R13



A Thoroughbred

To thoroughly enjoy radio you should have a Model 16 R.C.A. 6-Valve Receiver in your home.

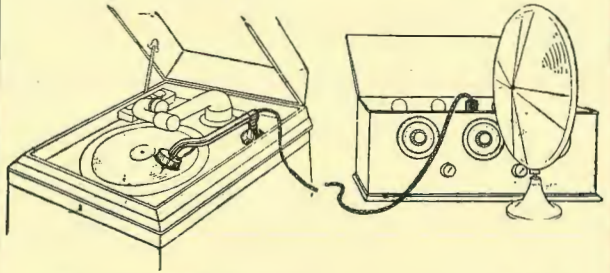
This compact little set is a "THOROUGHbred"—does its job without fuss always.

PRICE, without Accessories **£33**

PRICE, complete with Model 100A Speaker — **£55**

Dulcephone Electric

To enjoy perfect reproduction from a gramophone record, use an Electric Pick-up in connection with the 4-Valve Dulcephone Electric Amplifier. Results amazing. Quality and value unsurpassed by anything on the market to-day irrespective of price.



Magnaphon Electric Pickup	£3 15 0
Phonovox	£4 0 0
Crosley	£6 10 0
4-Valve Dulcephone Electric Amplifier, complete	£22 10 0

Write for particulars of Home Assembly Kits.

Accessories

Headphones, from 12/6 to £1/12/6
 Valves—Philips, Mullard, Osram, Radiotron and De Forest
 Condensers, Variable—Advance, Emmco, Pilot.
 Condensers, Fixed—Sangamo, Igranic, Muter.
 Speakers—Amplion, Brown, B.T.H.
 Accumulators—Exide.
 Batteries—Columbia, Burgess, Winchester, Hellesen, and Ever-Ready.

Buy British



and be Proud of it!

AS AN ADVERTISEMENT FOR

British OSRAM Valves

We are prepared to sacrifice 500 OSRAM VALVES at 4/6 EACH.

D.E.8 Low Frequency Valve, English and U.X. base.

D.E.8 High Frequency Valve, English and U.X. base.

D.E.3B. English and U.X. base.

D.E.4 English and U.X. base.

D.E.B. English and U.X. base.

Worth 10/6

OUR PRICE

4/6

D.E.2 Low Frequency Valve, English and U.X. base.

D.E.2 High Frequency Valve, English and U.X. base.

D.E.6 English and U.X. base.

D.E.5 U.X. base only.

WIRELESS HOUSE LIMITED

City Buildings

Edward Street

Brisbane

FOR YOUR CRYSTAL SET

An Amplifier

(BY THE TECHNICAL EDITOR.)

ATTACH this one-valve amplifier to your crystal set, discard the bothersome headphones, and let everyone listen on the loudspeaker. It is as simple as it can be made, yet its efficiency does not suffer on that account.

MANY hundreds of people living in the city and suburban areas listen-in regularly to the local station on a simple crystal-receiver, and undoubtedly derive great pleasure from the programmes. But the crystal receiver, excellent though it is in many respects, has its drawbacks, chief among which must be mentioned the compulsory use of headphones, and the inconvenience and expense of having to provide a separate headset for each listener.

We know there are very many of these listeners who would like to go one step further along the road to complete radio enjoyment—that is, the addition of an amplifier unit to their existing set, so that the whole family can listen-in in comfort to a loudspeaker, and headphones may be banished. Probably they often have contemplated taking this step, but are rather at a loss as to the right way to go about it. It is for these people that this article has been prepared, and let it be said here that the two factors which have been kept in mind are ease of construction and low

cost—both initial and upkeep. No bakelite panel, with its attendant drilling and filing, here; everything is simply screwed down, to a small piece of board, and connected up in the simplest possible way. The number of parts, too, has been limited to bare essentials. Do not, however, be misled by all this into the impression that because this amplifier is simple in the extreme, it will give inferior results. On the contrary, it is quite complete, and works excellently. When connected to the average crystal receiver, and a reasonably good loudspeaker, it gives a clear, undistorted output, sufficient in volume for any room.

Mounting the Parts.

Of the constructional side, little need be said, as the drawing clearly shows the layout of the parts, and the location of the various connecting wires. So that you will have as little trouble as possible, we are printing a list of the parts which we used in our amplifier unit. Of course, if you have any ideas on the subject, you need not adhere to our list rigidly, though it is wiser to do so. Any of the radio dealers advertising

in this issue can supply these parts, and you will be secure in the knowledge that they have actually been tested, and therefore, provided you wire them up correctly, your amplifier **must** work properly right from the start.

If you do not possess such a useful tool as a hand drill, it will be as well to ask the dealer from whom you purchase the parts to drill ten holes, one inch apart, in the bakelite terminal strip to accommodate the terminals, and an extra hole at each end for the mounting screws. The only tools then needed to assemble the amplifier will be a

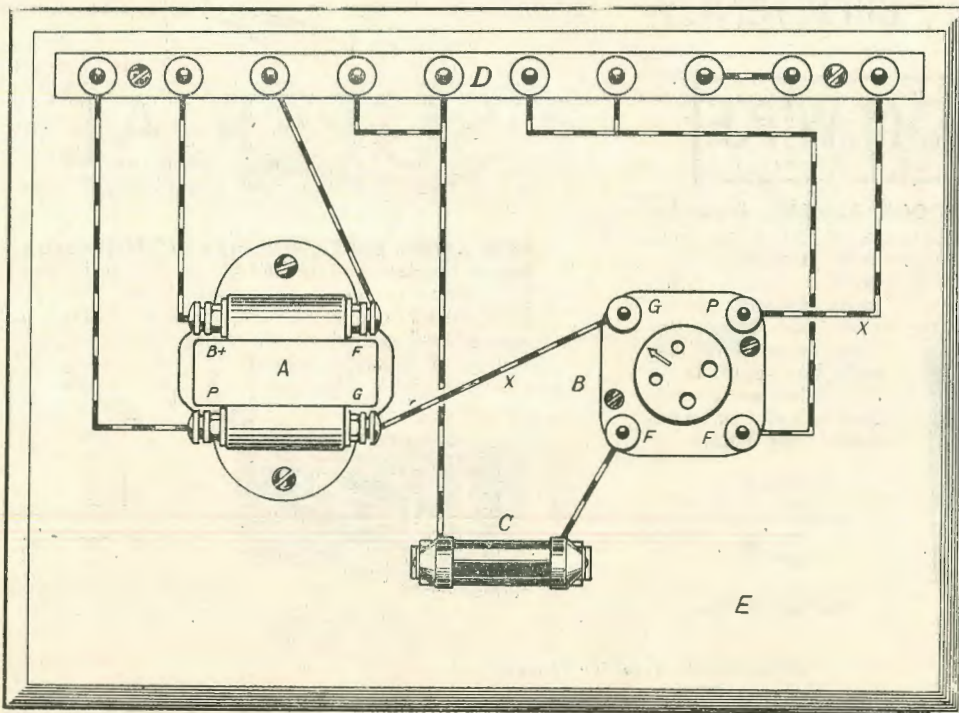


Fig. 1: This shows the Wiring and the Layout of Parts

The Reasons Why ELECTRON WIRE

Popularised Broadcasting

Its simplicity enabled everybody to erect an efficient aerial in a few minutes.

It is the best and cheapest aerial in the world.

It abolishes insulators, masts and separate lead-in tubes.

ELECTRON AERIALS ARE USED BY MILLIONS all over the world, giving better results, purer reception, clearer tone, and what is most important, greater selectivity.

ELECTRON WIRE Stands for
SIMPLICITY
ECONOMY
EFFICIENCY



ELECTRON WIRE
THE PERFECT AERIAL

THE PERFECT INDOOR AERIAL—it can be hung carelessly around the room, behind the pictures, or along the picture rail. It gives perfect results under the most difficult conditions and brings in programmes from all over the world. It is a complete aerial and lead-in all in one continuous length.



Price

2/6

Coil of 100 feet

SUPERIAL
THE KING OF AERIALS

FOR LONG DISTANCE RECEPTION—extra heavy insulation **SUPERIAL** is the aerial for long distance work. The extra heavy, vulcanised rubber insulation is a perfect protection against leakage which therefore minimises any loss of all incoming signals.



4/6

Coil of 100 feet.

Sole Distributors for Queensland:

CANADA CYCLE & MOTOR AGENCY, LTD.
CORNER CREEK and ADELAIDE STREETS, BRISBANE.

bradawl, a screwdriver, and a pair of wire-cutting pliers.

Commence by screwing the transformer (A), socket (B), and the Tempryte (C) down firmly to the baseboard. The transformer and the socket must be mounted with their terminals facing in the correct direction; this can be ascertained by referring to the markings on the instruments themselves, and the markings on the drawing. The easiest way to deal with the terminals on the terminal strip is to attach a length of wire to the underside of each terminal as you mount them on the bakelite strip. You can easily gauge the approximate length required for each terminal, and the wire should be cut a little longer than seems necessary, to be on the safe side. Make an eye in the end of the wire (round-nosed pliers are the things for this, though they are not indispensable), and clamp it firmly under the nut, on the **bottom** side of the terminal strip. When each terminal has been treated thus, screw the bakelite strip down, but with a half-inch spacer between strip and baseboard at each end. Small pieces of ebonite or fibre tube are ideal here, though a couple of tiny insulators or even two blocks of wood may be pressed into service.

The wiring should present no difficulties if the diagram is followed carefully; just make an eye in each wire where it is to be connected to a terminal, and clamp securely under the nut. The two wires marked

"X" should be put in last, as they cross **over** the other wires, and must on no account be allowed to touch where they cross. As the wire is stiff enough to support itself, there is no danger at this point if the upper wires are raised about half-an-inch above the lower ones.

The Final Stage.

When you have completed the wiring, and carefully checked it with the drawing, you are ready to connect the batteries, etc., so that the set will be ready for work. Follow Fig. 2 minutely, and it will all be plain sailing. For the battery connections, it is advisable to use insulated wire, not the bare copper that was used on the set itself. As soon as the batteries have been connected to the crystal receiver, the loudspeaker to the amplifier, and the valve inserted in its socket, you may tune in in the usual way, and if everything is correct, the local station will come in at good loudspeaker strength.

Do not forget to disconnect one wire from the "A" battery when you are finished with the set, or, instead, remove the valve from the socket. Only the one wire need be

touched; this automatically cuts off all current. A switch can be incorporated to do this, but we will leave that to you. In case your crystal set is not equipped with a by-pass condenser, it may be advantageous to try the effect of a .00025-mfd. fixed condenser connected between the terminals "P" and "B" of the transformer. Should an improvement result, the condenser should be wired permanently across these points; if not, leave it off.

A final word: We have assumed that the builder of this little amplifier unit will start off with the three dry cell "A" battery shown in the drawings. However, we cannot too strongly recommend the substitution of a small 4-volt accumulator for this purpose, because the latter is always infinitely more satisfactory than the dry battery in the long run. A suitable accumulator can be procured from any dealer for as little as 17/6; most certainly it is an investment which will pay for itself before long, as recharging is infrequent and inexpensive, and it has not to be renewed at intervals, which is the case with a dry battery.

PARTS REQUIRED.

- A—1 A.W.A. "Superaudio" Transformer, 5 to 1.
- B—1 Benjamin U.X. Socket
- C—1 Cyldon Tempryte, 17 ohms.
- D—1 Bakelite terminal strip, 10 x ½ in. with 10 Pilot nickelled terminals.
- E—1 Wooden baseboard about 11 x 8 x ¾ in.

ACCESSORIES.

- 1 Philips A-306 valve, U.X. base.
- 3 1½-Volt dry cells, or 4-volt accumulator.
- 1 60-Volt "B" battery.
- 1 4½-Volt "C" battery.
- 1 Loudspeaker with cord.
- Flexible wire for exterior connections.

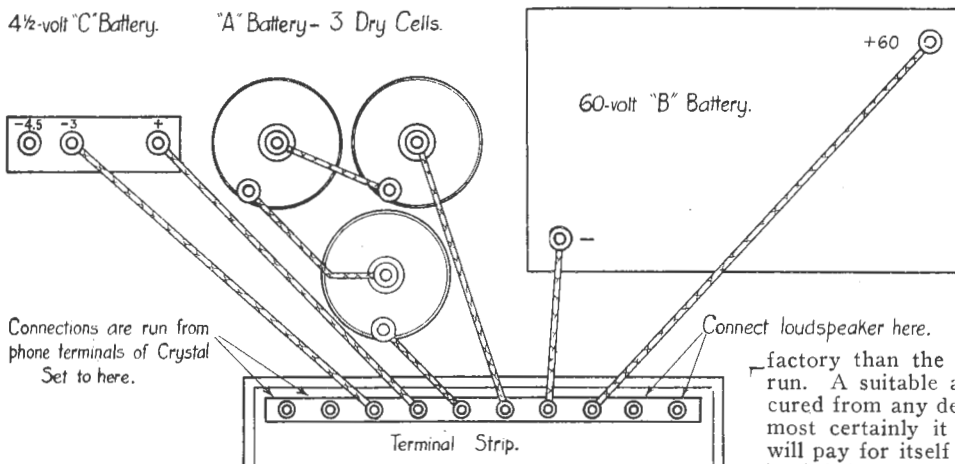


Figure 2 shows how to Wire Up the Batteries. Of course, the arrangement of the cells is left to you.

Victoria Holds World's Record in Percentage of Licenses

In Victoria it is computed that every third house has a radio set! Not only are there more wireless listeners in Victoria than in the whole of the other Australian States, but according to recent statistics, Victoria leads the world in the number of licenses per thousand of population.

The proportion of listeners to the population in parts of the United States is, perhaps, higher than in Victoria, but the average of Victoria's listeners per thousand of the population exceeds that of U.S.A.

It is not an unusual sight in many of the suburbs of Melbourne to see a wireless aerial to every house in every street. This applies particularly to the industrial suburbs.

There is no country in the world where wireless is more widely used than in Victoria. The number of licenses per thousand of the population in the principal countries is:—

Victoria (Aus.) ... 78	Australia 24.2
Sweden 53.6	Norway 22.1
Great Britain 53	Switzerland 15.9
Denmark 44.8	Czecho-Slovakia .. 15.2
Austria 43	Finland 8
Germany 28.1	Belgium 5

It is estimated that in the United States, there are 76 wireless sets in operation per 1000 of the population. Many theories have been advanced for the reason of the popularity of wireless in Victoria. Psychological and physiographical reasons have been urged by some, whilst others say that it is due more to home-loving instincts. It is significant, however, that the Wireless Royal Commission, after collecting voluminous evidence from many witnesses all over Australia last year reported as follows:—

"The position of 3LO Melbourne is unique amongst the broadcasting stations in Australia. It is almost universally admitted to give the most satisfactory service in the Commonwealth."

There can be no doubt that the services provided by the broadcasting companies regulate the popularity of listening-in. In other words, the rate of issue and cancellation of licenses is a kind of a barometer which shows fairly definitely the listeners' approval or otherwise of the broadcasting services. The excellent service of 3LO Melbourne has without doubt had the result of an extraordinary predominance of licenses in Victoria.

When that station commenced broadcasting, it had in view as an objective, "a radio set to every house"—rather ambitious, some may think, but when it is considered that there is now one licensed set to every three houses in Victoria, and about one to every two in the metropolitan area, with broadcasting only about four years old here, it may be assumed with reasonable safety that in another five years 3LO Melbourne will be listened to regularly in almost every house in Victoria, especially as a system of relay stations throughout the country should be established in the meantime.

HELLESENS

The Super

DRY CELL



The Battery that RECUPERATES while idle!

The world's oldest battery company introduces the century's latest dry cell improvement—the wonderful

No. 7 Recuperating Agent

This exclusive feature is to be found in no other dry cell. It ensures longer life and full value for every penny spent.

See for yourself how superior the New HELLESENS are. Connect one up to your set and take regular voltmeter readings. You'll be surprised.

PRICES

Standard Capacity—	
45V.	14/-
60V.	18/6
Triple Capacity—	
45V.	21/-
60V.	27/6

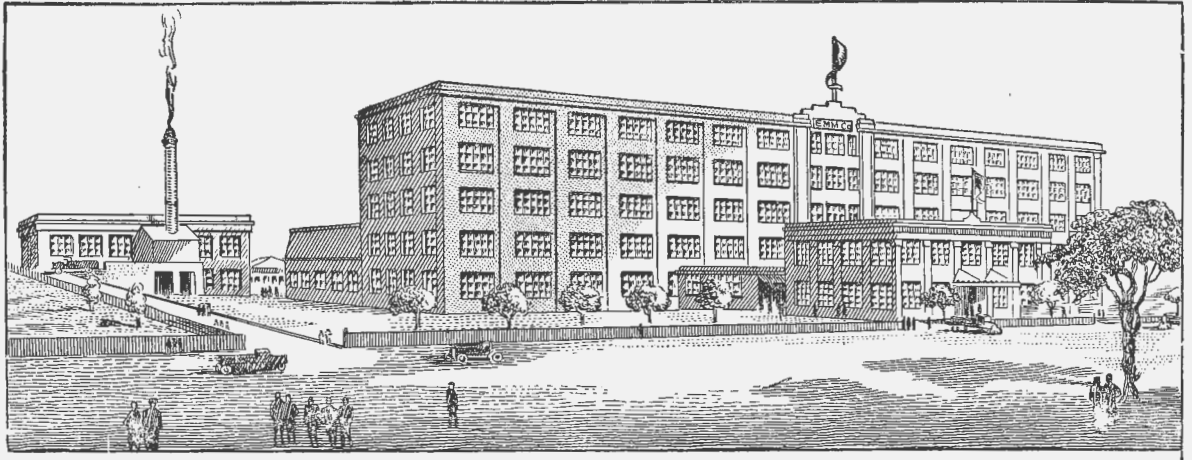
At All Good Radio Dealers

or 'Direct from

BRISBANE ELECTRICAL CO.

(T. Tonks)

ELIZABETH STREET (Next to 4QG),
BRISBANE.



Emmco Moves to New Factory

One whole floor in the huge new factory, to which Electricity Meter Mfg. Co., Ltd., have now removed from their old quarters at Camperdown, is given over to the assembling of Emmco radio parts, which takes in a full range of radio parts, from the diminutive Emmco switch to the A.B.C. eliminator. The new factory has a total floor space of over 135,000 square feet, and has been fitted with additional new machinery to the value of over £20,000, which brings the total value of the plant and equipment up to the enormous figure of £200,000.

Amongst the separate industries fostered and carried on in this big enterprise are represented many types of apparatus. For instance, there are electric refrigerators, petrol pumps, electricity meters, magnetos, bakelite products in all forms, etc., besides radio parts. The number of Bakelite presses which operate continually has been doubled. With these the most intricate and delicate forms of bakelite are turned out. More than 400 people are engaged in the assembling of radio parts alone. Swift hands press into place the tiny parts operated by their nickelled nuts and washers, placing the assembled parts in an automatic conveyer which takes them one step further on in production. Here the full force of the meaning of mass production strikes one. Mass production simply means the organisation of the process of manufacture, and it is literally fascinating to watch the development of each individual part from the time of commencement until it is packed into its carton.

The first floor is occupied by hundreds of girls, who operate the intricate and delicate machines which are used for winding the hairline wire on transformers used in radio work and also in the electricity meters.

One feature which impresses the visitor is the elaborate arrangements which have been made for the comfort and welfare of the employees. There are spray showers, tiled floor bathrooms, and automatic

drinking fountains spread over every two yards throughout the entire building. Enormously high glass windows in steel frames leave an abundance of light to illuminate this huge floor space; rest rooms, and a thousand and one safety devices as a protection against accident, vast overhead space in which fresh air circulates constantly—these are but a few of the modern improvements designed to create congenial conditions for the 1000 hands who are now working in such comfortable surroundings.

Another big feature of the Emmco factory is that every instrument, including tools, dies, etc., is actually manufactured on the premises. The factory itself occupies five stories constructed throughout of brick and steel with concrete facing, and standing in the centre of a three-acre tract of land. It is constructed in such a fashion that if necessity calls for it, the factory accommodation may be expanded to treble its present size.

The office accommodation is contained in a separate building connected by overhead bridge with the main factory. Here there are four experimental laboratories fitted with up-to-date testing instruments for the design and testing of new radio and electrical parts.

Emmco announces that besides the regular standard lines which will remain at the same price, new lines, including quality transformers, chassis and new lines of speakers, etc., are to be produced.

The growth in the production of Emmco radio products has been remarkable when we remember that a short three years ago only one line was being manufactured—Signal transformers. There are now 120 different articles, including condensers, eliminators, transformers, sockets, etc., etc., and a yearly volume is equalled in very few English or American plants. The watchword throughout has been quality, and it is scarcely surprising that exceptional public support has been given to this popular line.



*The bugbear of radio
- usually caused by
faulty valves!*

Also use Condor
Lamps for your
home and office

Specify
Condor

CONDOR LAMPS

[Australasia] LTD.

Sydney, Melbourne, Adelaide, Brisbane,
Wellington (N.Z.).

RADIO VALVES

THE HANDICAP OF THE COUNTRY AMATEUR.

(By "Bluegum.")

As it is no doubt a difficult matter for the radio dealers to arrive at an understanding of the conditions under which their country clients find themselves situated as to the construction or operation of radio apparatus, the following remarks may prove helpful.

The country amateur, especially the constructor, is at a great disadvantage, compared with his town cousin, with the latter's ready access to clubs and dealers. The country amateur must rely solely on textbooks, periodicals, correspondence, and hard-bitten experience.

How often have we experienced the joy of constructing a set from the pictorial diagram appearing in some periodical, only to find that the pictorial diagram does not agree with the theoretical diagram. It is a wise constructor who checks each, and every connection with the theoretical diagram, using the pictorial one merely as a general guide to the general layout of components. To the retailer "the golden rule" should influence every selection made for the country order department.

His duty is to place himself in his customer's position, selecting components for "that particular circuit" in the same thorough manner he would exercise if building the set for his own personal use.

The city customer can breast the counter, make his own selections, test components, seek advice, solicit service, and free delivery.

On the other hand, the country customer must take what comes to him, besides paying, in the majority of cases, a very heavy transit charge. Owing to the thoroughness of packing imperative for long distance transit, the extra weight adds considerably to the postage on packages.

However, the country amateur's enthusiasm takes a lot of damping; he has unlimited elbow room for experimenting, unhampered by the man-made static of power plants, and "howlers." Incidentally, he takes in the doings of city radio enthusiasts, and their various clubs, published in the press.

Altogether, the country amateur is wholly dependent on his dealer and radio magazines for keeping posted right up to date with all the latest ideas and gadgets that are inseparable from a rapidly-moving science.

BARITONE VOICE MOST DIFFICULT TO REPRODUCE.

The popular conception has it that it is harder to record a woman's voice than it is a man's, and that for this reason the fidelity of a loudspeaker in reproducing natural tones is better proved with a woman's voice. But this delusion is no more. Science has investigated the matter, and it has been found that a man's baritone voice is the acid test for accuracy when it comes to proving the quality of a loudspeaker.

Although the range of a soprano voice shows higher fundamentals than that of a baritone, the accompanying harmonics in the man's voice are higher and consequently more difficult to reproduce or record. If these are cut off, the tone is dulled and rounded and loses much of its quality. The corresponding

harmonics of a soprano voice are somewhat lower and easier to reproduce. The inference from this, then, is that when the quality of a loudspeaker is in doubt, call in a baritone.

NEW DUTCH SHORT-WAVE BROADCASTER.

From the Press Department of the Dutch Post and Telegraph Service, The Hague, Holland, we have received the following announcement:—

"The short-wave radiotelephonic station PCLL of the Dutch State Telegraph Service at Kootwijk will shortly begin to broadcast general curiosities on Holland and oversea possessions. Co-operation of amateurs is required for insertion of this news, which is sent out successively in Dutch, English, French and German, as much as possible in all local newspapers.

"The transmission will provisorily take place every Wednesday between 14 and 15 hours (G.M.T.) on a wavelength of 18.1 metres (16,600 kcs.).

"The Dutch Telegraph Service would appreciate to receive a copy of the newspaper in which the text has been inserted. Address, Radiostation, Kootwijk, Holland."

The above announcement will be of special interest to those of our readers who construct the short-wave adaptor described in this issue. The times specified correspond with the hour between 12 midnight on Wednesday and 1 a.m. Thursday, Eastern Australian standard time. We shall be glad to receive reports from any readers who hear this station.



For unsurpassed price value the British-Made "ORPHEAN" Loud Speakers defy all competition.

The "De Luxe" Model is the largest "ORPHEAN" Loud Speaker made, and gives the very best performance obtainable.

Price, 70/-, resistance 2000 ohms, height 24 inches, flare 14 inches. The "Standard" Model of similar design and construction is splendid value for 52/-, Height 19 inches, flare 10 inches, resistance 2000 ohms.

The "ORPHEAN GEM" the cheapest efficient British Loud Speaker, is obtainable in marvellous price value. Costs only 30/-. Height 19 inches, flare 10 inches, resistance 2000 ohms.

The "Oriel," for those who favour the cabinet type, is a splendid instrument at 60/-. Size, 15 inches by 9 inches by 4 1/2 inches. Enclosed in an artistic Oak Cabinet.

Write for Illustrated Leaflets No. 17 to

LONDON RADIO MFG. CO. LTD.
 STATION RD., MERTON, LONDON, S.W. 19, ENGLAND
 The NEW ZEALAND LOAN and MERCANTILE AGENCY CO., LTD.
 538 COLLINS STREET, MELBOURNE

Constructing a Receiver

When deciding to build a receiver, most home constructors choose one described in one of the popular radio journals; if their experience in receiver design is limited, they are advised to keep strictly to the layout given.

Occasionally the constructor wishes to build a set using some "pet" circuit and the layout is left to his ingenuity. The best way to proceed is to draw the outline of the components on paper and then, by following the circuit diagram, fill in the wiring between the components. It is necessary to keep the wiring as short as possible, and by altering the relative positions of the components an arrangement will eventually be found which gives the shortest wiring. "Live leads," i.e., those connected to grids and plates, must be kept short, as also leads which form part of an oscillatory circuit. The usual rules regarding the relative position of coils and transformers should be kept in mind.

When a panel of the correct size has been obtained, it is then necessary to mark it out and drill it. The marking-out should be done with a scribe and centre punch, and not with a pencil, as a pencil mark is conductive. Templates are often given with the components, but where these are not available, the holes can be marked off direct from the components.

It is usually advisable to tin all contacts on the components before assembling, and to clean off all flux carefully. The components can then be assembled. It is often convenient to wire some of the panel components before fixing to the baseboard, but that depends on the layout of the set.

When all is assembled the wiring can begin, and this part is the bugbear of most beginners, for many have the fixed idea that they cannot solder. It is strongly advised to solder all joints, and the sooner soldering is mastered the better. The job is simple if the iron is kept well tinned and hot, and if all joints to be soldered are first well cleaned and tinned. The wire should be bent to shape, and the point of contact noted and tinned. The joint can then be made without any difficulty and without flux being distributed over anything. Flux on a panel can cause a serious loss of efficiency through shorting.

A small soldering iron should be avoided, as it loses its heat too quickly, but one is often useful as a standby when a particularly inaccessible joint is to be made. When wiring is completed, flexible leads will have to be made for batteries, aerial and earth. The method of connecting the leads to the set is a little thing which matters, and which affects the appearance and trouble-free qualities of the receiver. Plugs and sockets are now very popular for connecting aerial and earth, while indicating terminals are convenient for the batteries. A typical range of well made gadgets of this description is the Indigraph range, made by the Igranic Company. The plugs are known as "Springmore" plugs. All that remains is to check the wiring before inserting the valves. It is advisable to try a peanut bulb in the filament socket with the batteries connected to avoid burning out the valves.



Let's Bind 'em up!

The February issue of "The Queensland Radio News" commenced the fourth volume of this journal.

Readers who have copies of Vol. III. intact (Feb., 1927 to Jan. 1928 inclusive) should have them bound into volume form for safe keeping and easy reference.

Bound Volumes of the Queensland Radio News [Vol. III]

Complete Bound Volumes

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QUEENSLAND RADIO NEWS

Box 1095N, G.P.O., BRISBANE.

THE READ PRESS LTD

Douglas Chambers, Adelaide St., BRISBANE.

The SONOCHORDE CONE

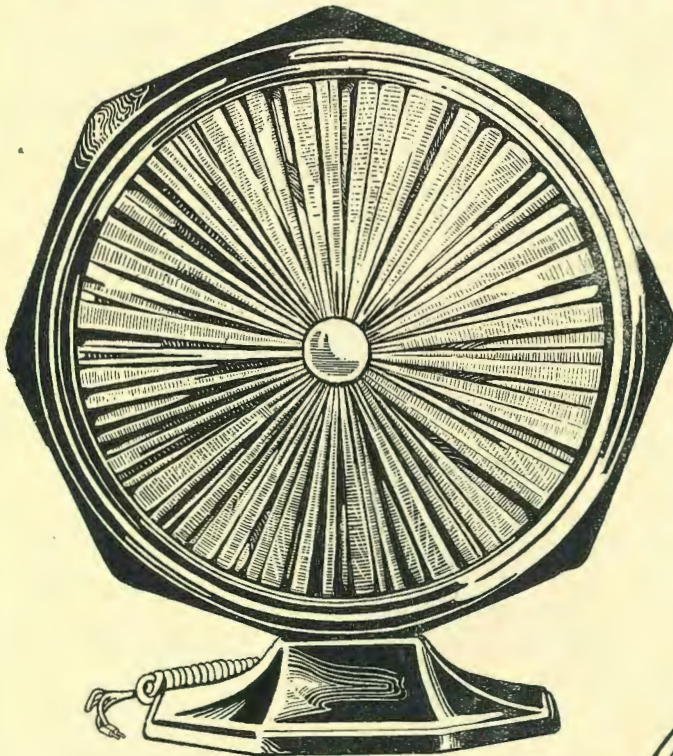
Brings the Studio to Your Home

Senior Model A2

Sonochorde is the Cone so often recommended by set manufacturers as best exemplifying the performing capabilities of their receivers. Equipped with an adjustable unit recognised as the most highly developed tone mechanism in radio. This unit employs four super-powered magnets capable of lifting more than ten pounds, scientifically balanced and angularly spaced—a patented design producing a rich, deep tone equalled by few speakers at any price and excelled by none. Designed by an acoustical expert, this Cone is a masterpiece of rare beauty with deep wine-coloured silk front neatly festooned from the centre, mahogany finished frame and base and protected back. Height, 18 inches; width, 16 inches.

Price £6 : 0 : 0

Also in Wall Model, equipped with Heavy Cord and Decorative Tassel; and Floor Standard or Piano Lamp design.

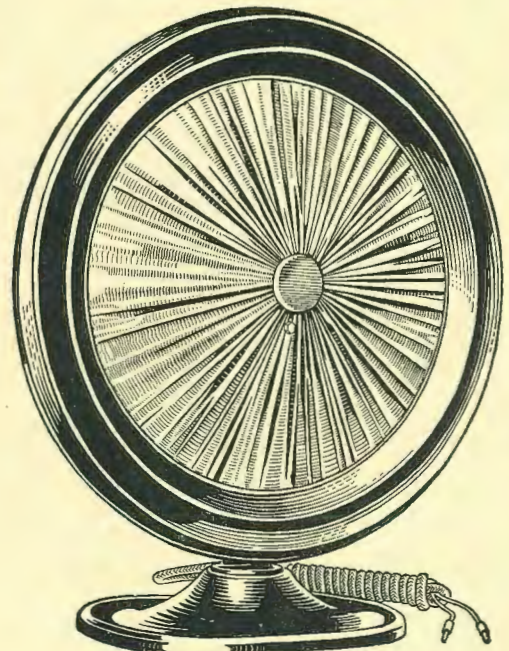


Junior Model J-28

This popularly priced design includes the features which distinguish Sonochorde and have made it synonymous with the highest quality of reproduction. The Junior Model is the latest development of the Sonochorde factories, and has behind it the oldest and largest organisation devoted exclusively to the manufacture of radio speakers. The chief difference between this design and the famous A-2 model is one of size. The Junior stands approximately 15 inches, and is 13 inches wide. Compare this Speaker for tone quality, range and volume with any loudspeaker, regardless of price. Compare its appearance and workmanship. We say this because Sonochorde sells best by comparison.

Price £4 : 0 : 0

Also in Wall Model, equipped with Heavy Cord and Decorative Tassel; and Floor Standard or Piano Lamp design.



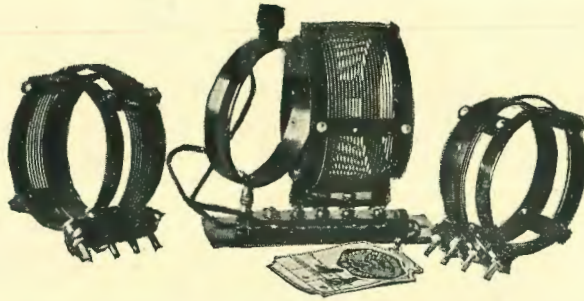
W. G. Watson & Co. Ltd.

55 CHARLOTTE ST., BRISBANE.

Phone: Cent. 2562.

HEAD OFFICE: SYDNEY.

Shown on the right is the now famous "RADIOKES" Short-Wave Tuner Kit, which covers a wavelength of 15 to 130 metres.



The "RADIOKES" Short-Wave Kit consists of three interchangeable R.F. units, an adjustable Antenna Coil, and base mounting. Price £2/15/ per kit.

"RADIOKES" 180 degree Three Circuit Tuner. Ruggedly constructed and reasonably priced at 14/6 ea.

NEW RADIOKES R.F. KITS

"RADIOKES" Bayer Kit. Comprises Antenna Coupler and Three Circuit Tuner. Moderately priced at 25/- per kit.

"RADIOKES" Binocular R.F. Coil Kit. Comprises three low-loss R.F. Transformers. . . £1/19/6 per kit.



"RADIOKES" Standard Neutrodyne Kit. Air wound construction. Also Master Neutrodyne Kit on Bakelite. Both types £1/12/6 per kit.

Illustration above is "RADIOKES" now well-known SOLODYNE R.F. COIL KIT. A most excellent product, which here illustrates the characteristic "Radio-kes" packing—now a land mark in Radio Frequency components.

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Like the full-toned
notes of the
Organ

THERE is a fullness and quality of tone about the C2 Loud Speaker which place is far and away above ordinary standards of wireless reproduction. It is more than a reproducer; it is a musical instrument in itself, designed and made like the organ for the production of harmonious sounds.

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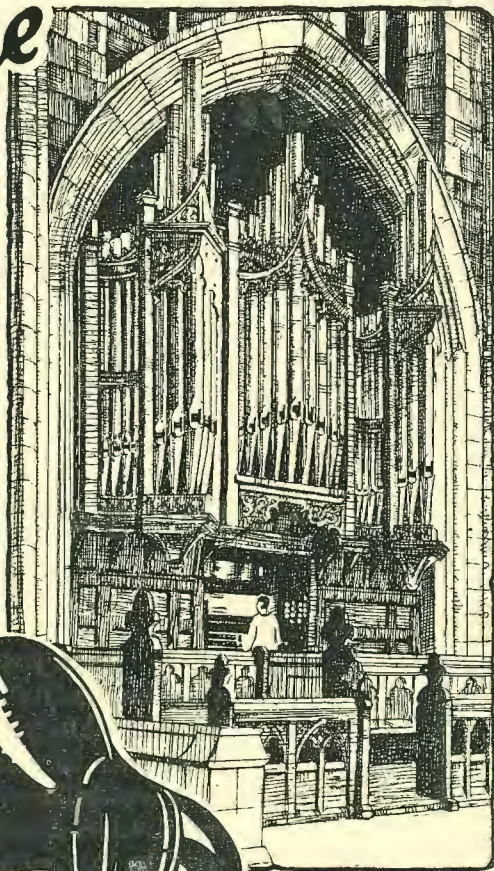
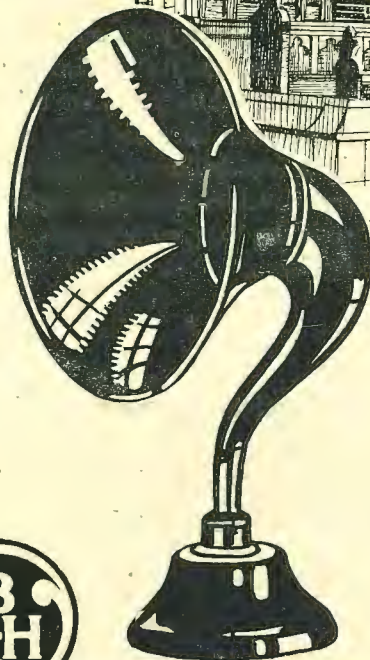
Please make a point of hearing the C-2 before deciding what make to buy. You will almost certainly buy the C-2, and will quite certainly enjoy the hearing.

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Entitles you to all the above advantages

Ask for copy of folder containing detailed information and make an early decision to join up with this modern Radio Service

“DX” RADIO SERVICE

ROMA STREET, BRISBANE

Opp. Govt. Cold Stores

Phone Central 7511



Aerial Avenue,
Radioland, April 1st, 1928.

To All My Little Radio Pals,

Dear Sweethearts,—

I hope you all like your new radio uncle—Uncle Pete. Fancy bringing him back all the way from Fiji. Isn't he a funny coon? High laugh is the best cure for the blues that I know of. As perhaps you know, Uncle Pete is going to talk to you every Tuesday and Saturday night—and I think you will love him very much—for he is such a dear old coon. Oh, yes! he is very black. If you tried to find him in the dark you would have a hard job indeed.

Uncle Pete has a parrot that he calls "Rastus." My! can't that bird talk? Uncle Pete says "Rastus" is a little afraid of the microphone and is somewhat shy, but he thinks the bird will soon get over that. And, Oh! you ought to see Uncle Pete's horse "Moonshine"—he's as thin as a rake and a knot is tied in his tail to prevent him slipping through his collar. Uncle Pete says "Moonshine" is a musical horse—he is, too, for when he trots his ribs rattle. Next comes Uncle Pete's dog "Blutch," which, according to Uncle Pete, is a prize thoroughbred mongrel—and he looks it, too. He is not particular what he eats and is very fond of children. That sounds nice, doesn't it? Uncle Pete tried to get "Blutch" to eat out of his hand one day, but he took a piece out of his leg instead.

Now, I want you all to enter for my competition detailed on this page. I also want you all to write a letter of welcome to Uncle Pete at 4QG.

Be good children, help mother all you can and always wear a happy smile.

Goodbye until next month.—Yours fondly,

UNCLE BEN.



Uncle Ben's Competition

Draw a Picture of Uncle Pete.

A prize of 7/6 for the best picture, and 4/6 for the next best picture, of Uncle Pete with his horse "Moonshine," his parrot "Rastus," and his dog "Blutch," is offered to the little readers of this page.

Draw your sketch in ink on plain white paper, and write your name and address at the foot of the sheet.

Send your attempt addressed to The Editor, "Queensland Radio News," Box 1095N, G.P.O., Brisbane, and write "Competition" in the corner of the envelope. Entries should reach this paper before the 20th of April,



UNCLE PETE AND "RASTUS."

The Funny Coon at 4QG and his Parrot sing a duet to the children.



Results of Last Month's Competition

Hundreds of children attempted to guess the respective ages of Uncle Ben & Co. in their entries for the competition announced last month. None guessed all four correctly. The following children sent in the nearest answers, and prizes will be forwarded on to them.

FIRST—Miss N. Boyes, Agnes St., Torwood.

SECOND—Doris Buck, Northgate Rd., Nundah.



"BUBS" AND COLIN

The Sandman's children try their skill at playing two of their daddy's many instruments.

AMONG THE AMATEURS

(By "Lambda.")

Yank QSO's have been very much on the increase during the past month. The intense cold prevailing at this time of year in northern U.S.A. and Canada doesn't seem to deter the NU's from staying out of bed until the early hours of the morning. Verily they are stout-hearted heroes who will brave the discomfort of 10 degrees below zero, so that their DX record will not suffer! Yet we, who never see snow—in our own State, at any rate—think, like the prophet of old, that we do well to be angry when we have to turn out at 5 a.m. in the middle of our mild winter! Truly, 'tis a hard life, my countrymen!

4LJ, our mighty man of the militia ("Apt Alliteration's Artful Aid"!) has been making a collection of NU connections. He worked no fewer than 40 in the course of a month's operation, but never more—so he says—than a miserable seven in one night. How he finds the time to do all this, in addition to the various other activities, among them the secretaryship of the Queensland Radio Transmitters' League, passeth understanding.

There is only one possible explanation: the midnight oil must flow freely at the Feenaghty home-stand.

The ever-active Tom, of 4NW, again distinguished himself this month by putting over some really surprising short-wave phone work. On Sunday, March 18th, he connected with SC-2AS (Chile), who reported his C.W. R-7. Both changed over to phone, and continued in both directions for over an hour. The Chilean told 4NW that his phone was the best he had ever heard from a DX station, and that he was getting everything O.K. And all this was accomplished with a power input, at 4NW, of less than 30 watts. Starkie is using the simple loop absorption method of modulating, with what success the work just mentioned shows.

4PN in Pastures New.

4PN still uses the faithful UX-210 with an input of 20 watts, and he, too, has done some fine phone work. Many DX reports have been received, including one from Indian 2KT.

4PN is starting out in the telephotography field; he is collecting all the information he can on the subject, preparatory to making a start on the actual construction of a picture machine.

In good sooth, the genial Russell is a man of many parts. He maketh music, he writeth, he walketh, he talketh (yea, in vast quantity), he hameth, and he sleepeth little; yet despite these things he waxeth exceeding fat and his smile is like unto the moon at its full.

4PN seldom gets home much before mid-night, but usually indulges in an hour or so at the key before retiring—"just to make himself healthily tired," as he expresses it!

4CM has been in trouble again, so they say, with his 500-cycle set. He actually had to QRT because of complaints from VKQ, which, to quote old Euclid, is absurd. Nothing daunted, Tom started up with a 2000 volt D.C. generator, and has been putting out some excellent telephony. Any "old-timer" hearing it cannot fail to be reminded of the 4CM of the old 850-metre days, when the air was clear, and restrictions were, practically speaking, nil.

Master-Oscillator for 4MM.

4MM's new master-oscillator rig is making the ether resound with its beautifully steady signal. General practice is departed from to the extent that the oscillator tube is similar in size to the power-amplifier—both of them UX-210's. From the United States, reports as high as R-8 have been received, and invariably the note is reported as almost D.C. Altogether, 4MM is very well pleased with the new arrangement.

Last Sunday, 4AW improved the shining hour by yarning with 6BIU (Hollywood, California) for a solid

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59 ELIZABETH ST.

4½ hours, single sending for the first two hours. Goodness knows what they found to talk about all that time, but, in passing, it occurs to me that a fourth of it might profitably have been spent at church, or in inventing a muffler for the exhaust of 4AW's motor-bike, which calls CQ in no uncertain tone. However, each man to his taste, of course, and who am I to criticise?

An interesting feature of this long-winded QSO was that, as the sun rose in California, the signal-strength at both ends dropped from a good R-6 to R-3, but returned almost to normal after the sun had climbed some distance above the horizon.

Walter Scott (only distantly related to Sir Walter of that ilk, who wrote "Hiawatha") who rejoices under the call of 4WS, is working consistently, and lately has been reported R-7 from the sixth U.S. district. 4WA, since changing over from a 350-volt "Airway" generator to Raytheon-rectified A.C., has made a big improvement to his signals. Some recent work includes R-6 from two NU's, and R-5 from Canadian 5AZ.

A Toowoomba Visitor.

4EG is in Brisbane, and has been visiting the various metropolitan amateur stations and Q.R.T.L. headquarters. Both 4CG and 4GO have received reports from Sydney saying that their 250-watt phone has been heard there at mid-day.

From Mareeba old 4BW puts out his usual pure D.C. signal, steadier by far than it used to be. He kept a schedule for some time with Indian 2KT, from whom he took several messages. A schedule is being run at present with 4PN.

Another Northern ham—"Digger D."—of Childers, was in Brisbane lately attending a Methodist Ministers' Conference. Incidentally, he managed to find time to visit some of the hams as well. You will know to whom I refer when I say that he operates under the call of 4RJ.

4RB has been handling test messages for the W.I.A. He uses lower power than formerly, but DX doesn't seem to suffer much on that account.

Two stations are active in Ipswich—4RO and 4GH. The former works every night between 6.30 and 8 p.m. on 250 metres. He has received reports from Victoria and N.S.W., but his carrier is not quite pure enough for his phone to be really good. 4GH, Gordon Harvey, has just started up with a 201A, and is getting out very well for a beginner.

4BD Has New Rectifiers.

4BD has scrapped his old chemical rectifier in favour of two 216-B Radiotron tubes, and says that he has found the ideal rectifier at last. A filter consisting of 4-mfds. of capacity, a General Radio "B" eliminator choke, and 3-mfds. delivers a plate supply, at 400 volts potential, which gives the emitted note a crystal-like purity. In fact, many reports received mention the "crystal-controlled" note!

With a Zepp. aerial, DX worked during the first half of March included Belgian 4EB, 4AQ, 4AR, 4BC, 4ZZ; French 8VVD, 8FG, 8YOR, 8EO; Japanese JXIX, JXCX; Indian 2KT; and many others nearer home. SB-2AJ was worked successfully with one 201A. 4BD's new card, bearing a cut of the Australian flag, is very attractively designed indeed.

New Announcer appointed at Station 4QG.



With the retirement of Mr. C. V. Woodland from The Queensland Radio Service some weeks ago, a vacancy was created, and applications were called for the position of official announcer to the station.

Many applications were received, and although the official papers have not yet come through, it is stated, on very reliable

authority that Mr. Harry Humphreys has been successful in securing the appointment.

We hasten to congratulate Mr. Humphreys on his appointment. Already we are beginning to recognise his voice and appreciate his announcements.

Mr. Humphreys is not a stranger to 4QG's microphone. For many months prior to Mr. Woodland's retirement, Mr. Humphreys occupied the position as deputy announcer to the station. His excellent Dickens' readings are too well known and appreciated to need comment in these columns.

It is also stated from another source that Mr. Harry Collins has been appointed deputy-announcer, and on account of his ability as an entertainer, is to assist Uncle Ben in Saturday's bedtime story sessions.

In our next issue we hope to give our readers more details of these appointments.

What's on To-night ?

Don't wonder any more—send a P.N. for 9/6 to Box 1095N, G.P.O., Brisbane, and the "Broadcast Bulletin" will be posted to you for one year. Contains full details of all the radio programmes.

Let Me Teach You MORSE

If you would become proficient in Morse Sending and Receiving, let me coach you, as I coached 4RB, 4AZ, 4BO and others, including commercial operators. Sounder or Buzzer method; speed and proficiency guaranteed; terms moderate.

CHAS. RUNGE

(3 Years' Experience as a Morse Instructor; Several Years as a Commercial Operator.)

Address enquiries c/o "Queensland Radio News," Box 1095 N, Brisbane.

Correspondence



The Editor will be pleased to receive for publication the opinions of readers on any matters pertaining to radio. The name and address of the writer should accompany each letter as an evidence of good faith.

(Editor, "Queensland Radio News.")

Sir,—I have read "Listener's" letter on 4QG's transmission and agree with him. The quality of transmission leaves very much to be desired. Power is there in plenty, and so is the whirl and burr, similar to that emitted by the contraption named "Lizzie." My work brings me in contact with many people owning radio receivers, and they all agree with me and complain bitterly of the noises which mar reception of 4QG. Therefore it would be a very wise plan for the engineers to thoroughly test their apparatus for faults. They are only nipping the keen radio enthusiasm in the bud, as many would-be listeners turn away after hearing a 4QG concert. I do not wish it to be said that I am criticising 4QG unfairly. All my statements are absolute facts. I have not enjoyed a 4QG programme for months, although their printed programmes show that they are ever improving their service.

So, 4QG, let's hear a better note from you soon, so that we may boast of our station and not let other stations in the other States be your betters.

Wishing you every success and looking forward to an early improvement,

"ANDREW."
Cunnamulla (Q.).



(Editor, "Queensland Radio News.")

Dear Sir,—Having noted complaints in your journal with regard to 4QG's transmission, or should I say distortion, appearing thereon, I would like to endorse remarks by two listeners. I first noticed this distortion about six months ago, and since then at times it is impossible to follow speech. This distortion is not constant; at times the transmission comes through perfectly. Relay work is particularly bad, and like another listener, I have tried all manner of sets, including R.C.A. Model 28, with the same results. In conversation with other listeners in this town, the complaint is general, and as we rely on 4QG entirely during the static season, this is very annoying, and is detrimental to radio generally.

Trusting you can find space in your journal for the above remarks.—I am, your faithfully,

"STILL ANOTHER LISTENER."
Mackay (N.Q.).

Why not Books ?

You cannot give better or more valued presents than books at any time. Here are a few selections from our vast stock which we cordially invite you to inspect.

The Ancient Mariner, beautifully illustrated in colour by Willy Pogamy, 16/-.

The Forsyte Saga by John Galsworthy, limp leather bound, 15/-; antique leather, 19/-.

Caravan, by John Galsworthy, limp leather bound, 15/-; antique leather, 19/-.

The Complete Opera Book, by Gustave Kobbe, antique leather, 19/-.

Omar Khayyam. We have several editions of this famous book—all are tastefully bound in leather, and are illustrated. Prices from 4/6 to 18/6.

Westward Ho, by Chas. Kingsley, illustrated in colour by E. A. Cox, 14/-.

Howard Pyle's Book of Pirates, a thrilling pageant of buccaneers, 10/-.

These are just a few suitable gift books selected at random. Be sure to make your present a book and you can be sure of our ability to supply it.

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MORE ABOUT THE SOLODYNE.

(Continued from Page 14.)

also. Thus you will understand why a mechanical adjustment of the three "gangs" is quite sufficient with the logmidline condenser, and why we were able to eliminate two balancing condensers frequently specified.

Foreign Noises.

Now, although the matter of foreign noises due to the proximity of electric-light mains or trams is common to all sensitive receivers, here is a little tip which some of our more unfortunately-situated readers will find useful. Fully 50 per cent. of these objectionable noises usually can be eliminated by the use of a small "capacity-earth," or counterpoise, in place of the direct earth connection. At the Technical Editor's home, power-leak interference is so bad that reception with a direct earth is not by any means pleasant. A 22-gauge wire tacked round the skirting-board and connected at one end to the frame of the piano gives ample volume on all inter-State stations, and at the same time, the power-leak noises are rendered negligible. The wire is, of course, joined directly to the earth terminal of the receiver. Naturally, any system of this sort reduces the strength of distant stations to a certain extent; but the Solodyne has so much reserve power that a reduction of efficiency is permissible in the interests of good reception. When a counterpoise is intended to cut down noise-interference, it should not have large dimensions; the best plan is to experiment with various lengths of wire until the most acceptable compromise is effected between volume of signals and volume of noise.

Loud Speaker Cords

During the recent wet weather, many folks were at a loss to account for the non-functioning of their loudspeakers. In many cases this fault was directly traced to the use of a cheap speaker cord, of the type having braided single cotton insulation over copper tinsel conductors. On pressure being applied to any point throughout the length of the cord, sufficient dampness of the cotton insulation, separating the conductors, created a short circuit across the latter. In each case a cord constructed from good quality rubber insulated lighting flex remedied the trouble at once. Tinsel conductors, though possessing greater flexibility than lighting flex, are soon acted upon by the atmosphere; corrosion follows, damaging the fine copper strands, and producing many of the noises commonly blamed on "Old Man Static."



**New Cover
Next Month**

This issue sees the passing of the present cover design of this journal. Next issue (May) will carry a new full page cover design, free of advertisement.

The new cover is but one of the many features in the great programme of improvement this paper is now working upon. We want to bring "Q.R.N." to a higher standard of excellence every month.

The present cover has done valient service, and its passing brings back memories of the time when "Q.R.N." was but a dream. It is computed that over a quarter of a million copies of the present cover have been printed during the thirty-nine months the paper has been in existence.

**The Radio Fan Likes
LOEWE VACUUM BLOCK CONDENSERS TYPE V.C. 100**



for they are almost entirely free from losses due to their being placed in a high vacuum, to their peculiar construction, and to an insulating resistance exceeding 20,000 million ohms. Each condenser is tested at 400 volts a.c. Ask your radio dealer for condensers in the vacuum tube only.



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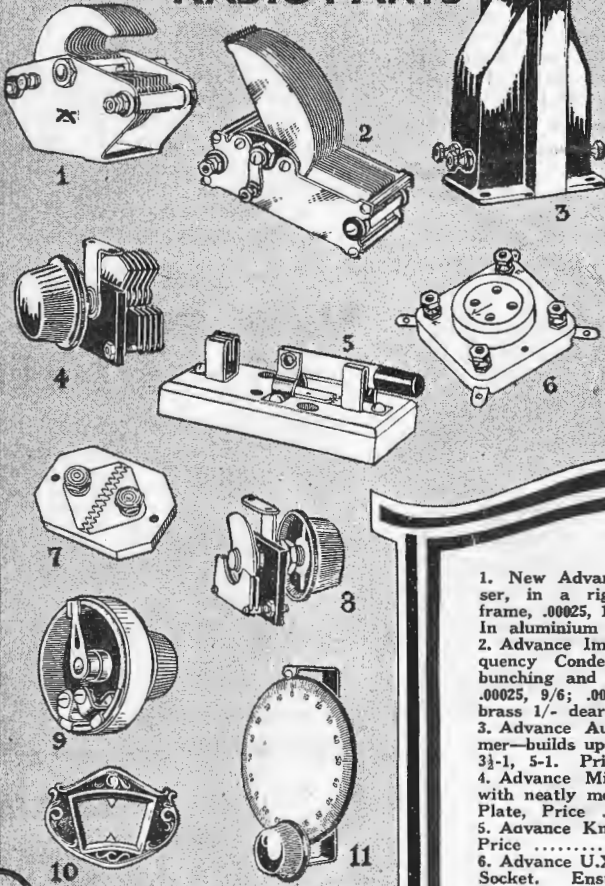
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3. Advance Audio Frequency Transformer—builds up volume. In ratios of 2-1, 3½-1, 5-1. Price 17/6.
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7. Advance Lightning Arrester. Passed by the Melbourne University and Fire Underwriters' Association. Price ... 2/6
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Club Activities



Wooloowin Radio Club [oa-4WN]

The usual weekly meetings have been held during the past month, the business of each being as set in the current syllabus, and proving very interesting. In addition to a series of lectures on subjects covering the requirements of the examination for obtaining an Amateur Operator's Proficiency Certificate, lectures on other constructional and theoretical subjects are included in this syllabus. A Morse class is also held from half-past seven till eight o'clock each Thursday evening.

The club's official operator, Mr. C. Stephenson, having recovered from his trip to Bundaberg as companion to 4QG's "mike" at Bert Hinkler's reception, is now spending his spare time getting the transmitter in working order again for the winter months. A quantity of new gear, including a seven and a half watt valve, is being purchased, and it is hoped to have same working with the next few weeks.

So the Toombul Radio Club (4TC) has now got a new asphalt footpath in front of its shack and a flashing light to point out the whereabouts of that dingy edifice to the public! Now, that really is too nice! Of course, long ago—when 4WN was young and as 4TC was and still is, little known, a bright light high up on one of 4WN's stately aerial masts, nightly illuminated the club's call-sign thereon. This is, however, no longer the case, as everybody now knows where 4WN meets in Willmington Street. Due to the excellent work of Mr. A. J. Thomas, the lawn between the club-room and the entrance gate is now in splendid condition, and is not a fine lawn more aristocratic looking than some broken pieces of asphalt such as decorate 4TC's entrance?

It is 4WN's intention in the near future to hold another field day. This promises to be, if possible, more successful than the last. Of course, another club also holds field days, but 4WN claims to know the secret of holding a perfect field day! 4TC representative on the last occasion had, unfortunately, to retrace his wheel tracks half-way through the proceedings, but next time a better road will be chosen, and it is hoped that two or three members of Toombul will attend throughout the proceedings, and learn how to conduct a proper field day for themselves.

Correspondence from other clubs and individuals interested in wireless is invited, and should be addressed to the Secretary, c/- of Mr. Thomas, Willmington Street, Wooloowin.



Toombul Radio Club

The fourth annual meeting of the Toombul Radio Club was held in the club-rooms on February 29th last, Mr. F. Collins presiding.

The treasurer's report showed the club to be in an extremely satisfactory financial position.

The election of office-bearers resulted as follows (Messrs A. E. Walz and T. W. Starkie having tendered their resignations as treasurer and secretary respectively):—

President, H. E. Hannington, Esq.; vice-presidents, E. H. Coulter, Esq., and F. C. Francis, Esq., and several other gentlemen; secretary, W. E. Vining; treasurer, E. Coulter; executive committee, the president, secretary, treasurer, and Messrs. L. Hubner, J. Walker and A. E. Walz; technical committee, Messrs L. Hubner, A. E. Walz, T. W. Starkie, W. E. Vining and T. Riding; auditors, Messrs A. D. Macpherson and T. Riding; librarian, Mr. A. D. Macpherson.

The president's report, which was presented on the following Wednesday evening, March 7th, showed that the club had experienced an extremely busy year.

At the meeting on March 7th the rules committee presented their report and copies of proposed new rules, which were unanimously adopted.

Wednesday, March 14th, being a "free and easy" night, a fair number of members assembled to hear two lectures. Mr. T. Riding spoke on "Fault Finding in Radio Receivers," whilst Mr. W. E. Vining gave a short talk on "Radio Communication."

The club-rooms are open every Wednesday evening and visitors are always welcome.



Aunt Prudence: "Keep away from the loudspeaker, Denny, the announcer sounds as though he has a cold."

The Perfect Battery

Look to your Battery if you have perfect reception. Eliminate those crackling and sizzling noises which you usually call static—they are probably due to faulty and inefficient battery power.

With the C.A.V. British Battery, specially constructed for radio work—you will receive a smooth flow of power and a maximum of battery efficiency throughout its long life of radio operation.

Instal a C.A.V. Battery now, and get the most out of your set.

C.A.V. RADIO "A" & "B" Batteries

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Free!

**This Magnificent 6-Valve
R.C.A. Receiver & R.C.A.
Model 100A Speaker—
Valued at £45**

**Do you
Realise—**

What this great scheme really means? Are you fully awake to its possibilities?

If the wonderful Trophy were offered as the only incentive to enter, the competition would be well worth entering. But apart from the trophy **EVERY ENTRANT** is paid—

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Unless you are content with your present earnings, put your spare-time hours to great profit by working for this journal. You've nothing to lose—and much to gain.

**Fill in your
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NOW!**

The publishers of this magazine are desirous of enrolling more subscribers, and solicit your assistance — for which they are prepared to PAY.

We ask you to introduce "The Queensland Radio News" and "Broadcast Bulletin" to your friends and neighbours, or to canvas your district. We pay 20 per cent. commission in monthly cheques, and the amount of your commission is limited only by your ability to book up subscribers.

Big Spare-time Money for YOU!

This offer is a genuine opportunity to increase your weekly earnings. You are supplied with books of subscription forms and all information and hints on selling.

The task is easy—for who would not pay 6/6 for 12 issues of "The Queensland Radio News," or 9/6 for 52 issues of that splendid little weekly programme paper "The Broadcast Bulletin."

IMPORTANT

In response to many requests, we are amending Condition No. 2 (see last issue). We have reduced the minimum number of subs. eligible for commission from ten to FOUR. This makes the scheme easy. Surely you can book up FOUR subscribers—and earn your 20 per cent. !!

ENTRY FORM

The "QUEENSLAND RADIO NEWS,"
Box 1095-N, G.P.O.,
BRISBANE.

Dear Sirs,—

I am desirous of becoming a subscription agent for your radio publications, "The Queensland Radio News" and "The Broadcast Bulletin." Please send me by return post, supplies of working material so that I may commence work immediately.

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.....

An Open Letter to Readers

By THE EDITOR

DEAR READER,—This is the first occasion upon which I have addressed an Open Letter to you, and I am purposely making it a personal one. I want to talk to you about our Big Subscription Competition now running through our radio publications, "The Queensland Radio News" and the Broadcast Bulletin." I want to impress upon you what a wonderful opportunity this scheme presents to you and to our papers if we but co-operate.

I speak of this scheme as a "competition," but it is something infinitely greater than that. A competition usually offers a prize as the sole incentive to enter. Those who enter know full well that their chance of securing any return for their efforts is small. But in our scheme the 20 per cent. commission we offer is the first attraction, while the magnificent trophy illustrated on this page is the double reward for the entrant who books up the greatest number of subscriptions.

Perhaps you may be interested to learn just how the scheme came to be launched. I was talking one day to our manager, who remarked that there must be some thousands of radio fans in this State who do not read our papers. "True, there is," I replied, "and most of these have never had the opportunity to see the publications." We then went into the question of endeavouring to reach these people, and finally came to the conclusion that the only way to get in touch with them was through our readers. We then decided to run a competition. "Will we offer a worth-while prize, or will we pay commission to each entrant?" asked the manager. "Why not offer them both?" I replied. "Make the commission substantial, and let the prize take the form of a trophy to be presented to the most successful entrant."

"Whew!" said the manager, "the terms are certainly attractive." "They must be," I replied; "we want to attract a big field." So it was decided to pay 20 per cent. commission to each entrant, and to offer the £45 trophy you will see illustrated above.

Now, you will agree that we have done all in our power to make the reward worthy of the effort. Think of your many friends and neighbours who have wireless sets and who would not only be glad to receive either or both of our radio papers, but would also be glad to help you win the splendid trophy. Think of the spare evening hours that could be turned into golden money making hours by canvassing all the houses equipped with wireless aerials in your district!

The work is so easy and the reward is so good. Some entrants only average one subscription to both papers per day. This earns for them nearly £1 per week. Others are earning £4 and more per week.

YOU can do the same. Get your family and your friends to help you, and it will really surprise you how quickly your commission will mount up.

This scheme was announced in the March issue of this paper. Already men and women in all parts of the State are working for us. Some of these entrants admit that they do not aspire to win the trophy—they are content with the liberal commission. Other readers in the suburbs are sending their figures up by leaps and bounds to their delight and our gratification.

In the conditions of the contest, published in our last issue ten was mentioned as the minimum number of subscriptions eligible for commission.

In response to numerous requests, we have now reduced that number to FOUR—which makes it still easier for those who can forward only a few subscriptions.

We supply each entrant with books of subscription forms for both papers. Very complete information concerning the methods of selling, and our follow-up service is also supplied.

If you are really anxious to increase your earnings—turn to page 4 and fill in the Entry Form. You've nothing to lose but much to gain—**SO DO IT NOW!**

Yours faithfully,

THE EDITOR.



The Handsome Trophy to be presented to the most successful entrant. This R.C.A. 6-Valve Receiver and Model 100A Speaker is valued at £45.

Chemically Pure

IT'S not only the unbreakable, leak-proof, ebonite containers, not only the specially thick plates and unyielding wooden sparators, that make for the perfection of Clyde Batteries.

The CONSISTENT PURITY of the materials used is a vital factor in the process of manufacture. It's this consistent purity of materials that gives those well-known qualities of LONG LIFE that are recognised features of every Clyde.

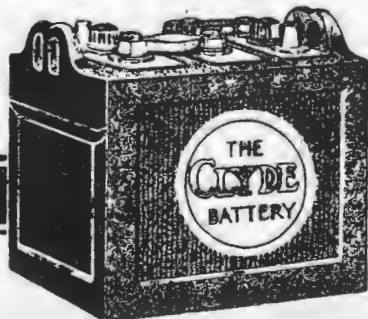
Regular daily tests in a laboratory conducted by trained chemists ensure that every particle that goes into the internal construction of Clyde Batteries is CHEMICALLY PURE.



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To Country Residents. Write to the Clyde Battery Service Station, 106 Goulburn Street, Sydney, for full particulars of Clyde Home Lighting Batteries.

Advertisement of The Clyde Engineering Co. Ltd.



CARS

RADIO

This department is conducted for the assistance of our readers. Except under special circumstances, we do not undertake to supply answers by mail.

Questions Answered

By the TECHNICAL EDITOR

Questions received before the 20th of the month will be answered in the following month's issue. Queries arriving after this date are deferred until the next issue.

F. Henderson, Mapleton.—“I am thinking of converting my present five-valve set into a Solodyne, as described in your March issue, but in your description you specify six-volt equipment. Now, I am using B-406 valves and Carboncell ‘A’ battery, and am wondering whether they would not be almost as good. I think that rheostats would suit me better than Temprytes owing to the peculiar action of the Carboncell battery, which is much stronger when switched on than it is later. Please let me know your opinion on these matters.”

Answer:—The valve you mention will be perfectly satisfactory for the Solodyne. We think it would be a good idea for you to retain the Temprytes, but to connect a six-ohm rheostat in the negative filament line between the set and the battery. As the battery drops in voltage, the rheostat can be advanced, thus compensating for the drop. The resistance values of the Temprytes should be computed on the lowest voltage you think your battery delivers after the set has been switched on for some time. If you supply this information to your dealer, he should be able to furnish you with the correct resistances. However, there is nothing to prevent you using rheostats throughout if you so desire. Regarding your other query, we can only refer you to the article published elsewhere in this issue dealing with the subject you mention.

G. H. Cave, Beerburum:—“Will you please tell me through the ‘Questions Answered’ Page if there is any way to eliminate the distortion that has been part of 4QC’s nightly programme since before Christmas? Reception during daylight is generally good, but as darkness comes on, the distortion gradually gets worse. Other listeners within a few miles have the same experience as myself, and, if it was not for the southern stations, we should have no wireless after dark. I have a three-valve, three-coil regenerative set, and everything seems to be in first-class order.”

Answer:—Regarding this matter, we regret we cannot assist you, beyond referring you to the article published in another part of this issue.

“Battery,” Redcliffe.—“Can you explain the reason why one of my 45-volt ‘B’ batteries always runs down a considerable time before the other one? I have a five valve set of the old tuned-anode type, using 22½ volts on the detector, 45 on the high-frequency valves, and 90 volts on the low-frequency. One battery usually lasts about six to eight months, but the life of the other rarely exceeds four months. The set is fitted with a ‘C’ battery.”

Answer:—The occurrence you mention is quite in order, and is very common. You will find that the battery which discharges quickly is the one to which your detector and radio-frequency windings are connected. Upon consideration, you will see that this battery has to feed all five valves, the two radio-frequency detector, and the two audio. The second battery supplies only the two audio valves, hence it has a much longer life than its hard-worked neighbour. We can suggest no remedy for a tuned-anode circuit, since the indispensable potentiometer precludes the use of a ‘C’ battery bias on the radio-frequency valves. This old circuit, it might be mentioned, is notoriously heavy on ‘B’ battery current, for the reason that the r.f. valves generally have to be biased positively in order to suppress oscillation, and this immediately increases their plate current.

B. J. O’S., Chelmer.—See reply to “Battery,” Redcliffe.

“Speaker,” Toowoomba.—“I intend to fit a Radiotron U.X.-120 in place of the U.X.-199 in the last stage of my four-valve Brown-Drake. Would you kindly tell me if it is necessary to use the high plate voltage (135 volts) recommended by the makers, and a ‘C’ battery of 22½ volts? Also, do you consider the addition of this valve will improve my reception to any great extent?”

Answer:—When the U.X.-120 is used as an amplifier it is necessary to use the ‘B’ and ‘C’ voltages specified by the manufacturers, otherwise you may just as well leave the set as it is. Yes, most certainly the U.X.-120 is well worth while, and you will notice a wonderful improvement in both volume and tone-quality—chiefly the latter. The very reason for the improvement in quality is that the characteristics of the U.X.-120 are such that the high grid bias (and consequently high plate voltage) are necessary. This allows the valve to handle comparatively loud signals without overloading, and consequent distortion.



J.M.B., Brisbane:—“I have two large variable condensers of .001 mfd. capacity containing 43 plates each. Now, as these are seldom used, I want to pull them to pieces and make some of smaller capacity suitable for short-wave work. As there may be others in the same position as myself I think if you would kindly print a tabulated list of the required number of plates for each capacity, it would be useful to many of your readers. I know that the thickness of the plates and the spacing has to be considered, but I think you will be able to work it out for me, having the .001 equivalent to 43 plates to work by, and using the same spacing washers. Thanking you, etc.”

Answer:—The appended list will supply the information you require. The values of capacity for a given number of plates are approximately only, since the size, spacing, and area of the plates must be known in order to calculate the capacity of a condenser with any degree of accuracy. However, these sizes of condensers are accepted as standard, and will be quite accurate enough for most purposes. In re-building a condenser, one must be careful to insert washers of the same thickness as the plates in place of every plate removed. These may be cut from the plates themselves, using the holes already drilled. Such re-built condensers are quite practicable, though rather bulky.

.00015 mfd. Capacity	.....	5	Plates
.00025	.....	11	”
.0003	.....	13	”
.00035	.....	17	”
.0005	.....	23	”
.001	.....	43	”

L.B.T.M., Childers.—“Which type of condenser will give greater selectivity—the straight line wavelength, or the straight line frequency? American magazines seem to favour the S.L.F., while the S.L.W.L. appears to be most popular in England.”

Answer:—The type of variable condenser has absolutely no effect whatever on the selectivity of a circuit. A set using the old semi-circular plate condenser will be equally as selective as one having modern S.L.F. condensers, provided they are equal in quality. The newer designs of condenser give easier tuning, and that is all. Your question is the basis of a very widespread misconception, and we hope to explain the matter fully in an article which we intend to publish in our next issue. For present-day Australian conditions, there is practically nothing to choose between the two types you mention, though we would be inclined to favour the S.L.W.L.



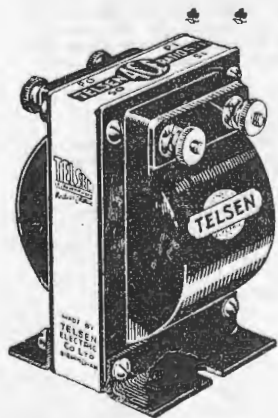
TESTED AND RECOMMENDED

A Department of Investigation, conducted for the benefit of our readers. Every piece of material featured on these pages is subjected to a rigorous and searching test before publication. No remuneration is received for the publication of these paragraphs.

The "Liontron" Crystal Detector

A beautifully-finished little instrument handed to us by the agents (Messrs. Amalgamated Wireless, Aust., Ltd., King House, Queen Street, Brisbane) is the "Liontron" crystal detector. This unit is of the semi-fixed type, totally enclosed, and designed for panel mounting. The combination of Gillenham and Tellurium results in a rectifier of remarkable sensitivity and stability, and the pressure between the minerals, applied automatically by a spiral spring, is such that the detector is not easily jarred out of adjustment. Very little adjustment is needed, the crystals being sensitive over almost their entire surfaces, but a polished ebonite cap which fits over the adjusting knob precludes the possibility of the movement being disturbed once the position of maximum sensitivity is found.

On actual test, this detector brought in 4QG at fair loudspeaker strength three miles distant from the station; the volume being such that the announcements could be clearly followed ten yards from the speaker, when no outside noises were present.



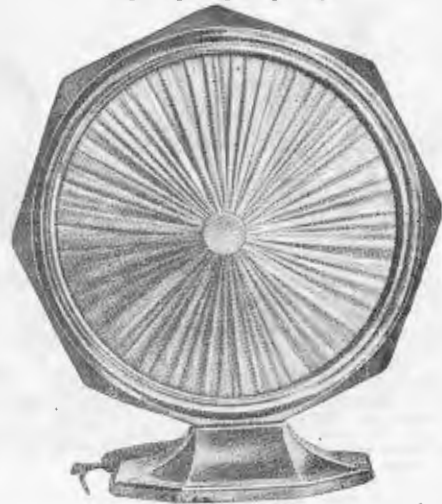
The "Telsen" Low-frequency Choke

The audio-frequency choke has several important applications in radio receiver construction, chief of these being its use as a coupling impedance in an output filter preceding the

loudspeaker, as a coupling medium in impedance or choke coupled audio amplifiers, and as a substitute for the grid leak in some forms of power amplifiers. In order that it should function correctly, it must have a core of large cross-section and high-quality laminations, windings of low distributed capacity and comparatively heavy-gauge wire, and should be completely shielded.

Such an instrument is the "Telsen" low-frequency choke, submitted by Messrs. Edgar V. Hudson, 55 Charlotte Street. On test under actual receiving conditions, this well-made British unit gave excellent

results, and we can thoroughly recommend its use wherever a low-frequency choke is required. We are informed that low self-capacity is secured by the Telsen method of proportioning the windings, and the core is of ample dimensions. The exterior of the shield which surrounds the instrument is attractively finished in black enamel, while all bright parts are either plated or of satin aluminium finish.



The Synochorde Cone Loudspeaker

The sample of the Model A-2 Sonochorde cone sent to us for test by the distributors (Messrs. W. G. Watson & Co., Ltd., Sydney) more than justified the rather strong claims made by its manufacturers. The quality of reproduction, when coupled to a good receiver, was a revelation, and certainly was all that one would expect from the very highest type of cone reproducer. Very low notes, totally inaudible on the horn type speaker, were reproduced with startling realism, while the brilliance of the high notes was unimpaired. The "rattling" on loud passages of music, characteristic of so many cones, was conspicuous by its absence, and the A-2 appears to be capable of handling any amount of volume without distortion. Fine appearance has been achieved by simple treatment of the lines and colour scheme, and mechanically the construction is excellent. We understand that two other models are available—the "J-28" (a junior model), and the "A.S.," which is a floor model, fitted with a tastefully designed bronze-finish standard. The patented Sonochorde driving unit is retained in all models.

The "Pilot" Art Dial

From Messrs. United Distributors Ltd., of Queen Street, Brisbane, comes a sample of the Pilot Art Dial, one of the latest items of the well known Pilot line of radio apparatus. The vernier movement of this dial has a reduction ratio of ten to one, and, being of the friction type, it is quite free from backlash.

By an ingenious arrangement of the graduated scale, the dial is suitable for either clockwise or counter-clockwise rotation—an exclusive Pilot feature. By the simple expedient of drilling one hole and adding a Pilot dial-illuminator, the window through which the scale is read may be illuminated from behind the panel. A very important point about the design of this dial is that it is recessed, this feature allowing it to be used with a single-hole-mounting condenser.



The single catch-screw, unlike those of so many dials, is fitted from the front, and is so placed that it will not foul the mounting screws of any make of condenser. A particularly good job has been made of the bakelite moulding, the design is pleasing, and its width being only three inches, the dial occupies little panel space.

Television Challenge Refused

Simultaneously with the announcement of the television experiment between London and the Berengaria in mid-Atlantic, referred to in the daily press, came a challenge of £1000 from the magazine "Popular Wireless" for Mr. Baird (the operator of the Berengaria) to televise over a distance of 25 yards to the satisfaction of a special investigatory committee the following items: Three faces, a tray of dice, simple geometrical figures, and a clock dial. The journal adds that it believes that television is possible, but development is impossible by Mr. Baird's present methods.

Mr. Baird immediately declined, saying that he was above such a publicity stunt. When his decision was communicated to the editor of the magazine he commented: "It is just what I thought. Our criticism of Mr. Baird is supported by eminent scientists."

Successful television between London and the steamer Berengaria in the mid-Atlantic was stated to have been achieved on March 7th, when Mr. Baird (the chief wireless operator on the Berengaria) saw his fiancée sitting in a studio in London. The tests were carried on for two hours. The vision sometimes was particularly clear, according to reports which were published at the time.

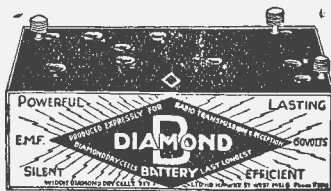


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Diamond Radio Batteries are powerful, silent, and outlast any other make of Dry Cell. More than a million are manufactured in Australia annually. Every cell is guaranteed, and should a fault be found in any Diamond Dry



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

- "A" Buzzer Cells, 1.5 volt 2/9 each.
- "B" 60 volt Super B. Battery, 27/6 each.
- 45 volt Super B. Battery, 22/6 each.
- 60 volt Standard B. Battery, 18/ each.
- 45 volt Standard B. Battery, 15/ each.
- "C" 4.5 volt "Biaison" C. Battery, 3/3 each.

Wholesale only from:—
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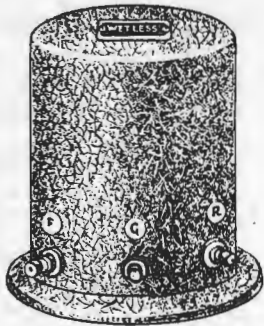
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SOLODYNE SHIELDED COIL.

"Wetless" Solodyne Kit with two Neutralising Condensers. Price 70/- per kit.



SINGLE ROTOR TUNER

"Wetless" Single Rotor Tuner. Price 13/- ea.



"A" TYPE.



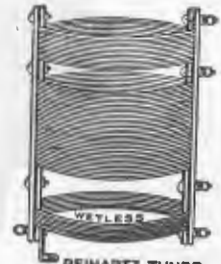
NEUT COIL KIT

"Wetless" Neut. Kit, with two neutralising condensers. Price 35/- per kit.
 "Wetless" Radio Frequency Choke. Price 6/6 each.



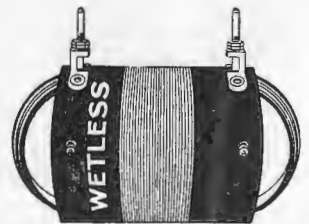
BROWNING DRAKE

"Wetless" Browning-Drake Kit with Neutralising Condenser. Price 38/6 per kit.



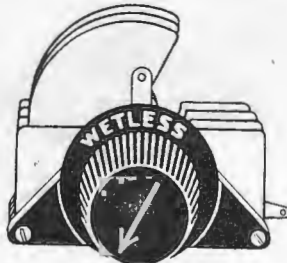
REINARTZ TUNER

"Wetless" Reinartz Tuner. Price 10/6 ea.



DOUBLE ROTOR TUNER

"Wetless" Double Rotor Tuner. Price 18/6 ea.



MIDGET CONDENSER

"Wetless" Midget Condensers, 3-plate, 4/3; 5-plate, 4/9; 7-plate, 5/3; 9-plate 5/6; 11-plate, 5/9; 13-plate, 6/3 each.



"B" TYPE.

"WETLESS" MICA CONDENSERS

A. TYPE.	1/6 Each	B. TYPE.	2/- Each	B. TYPE	Each
.0001	}	.001	}	.003	2/6
.00015		.00015		.004	2/6
.0002		.0002		.005	3/-
.00025		.00025		.006	3/6
.0003		.0003		.0075	3/9
.0004		.0004		.01	5/-
.0005		.0005		.02	5/6
.001		.001		.0025 (with clips), 2/6 each.	
.002					
.00025 (with clips), 1/9 each.					

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Whispers from Maoriland

The Wellington Amateur Radio Society is asking the authorities at 2YA for more relays from theatres, especially theatre orchestral music, as listeners appreciate the light orchestral music, which is a feature of the programmes from 3YA and 1YA, while Wellington is not catered for in this respect as it should be.

The Wellington Society is now employing an outside organiser, and its membership should shortly show a substantial increase.

A stir has been caused in Auckland radio circles over the dismissal of Mr. Trevor Stringer, until recently Station Director of 1YA. According to Mr. Stringer, his dismissal was very sudden and no warning whatever was given to him. He says that Mr. Bellingham, the Musical Director, came to Auckland at Christmas week, and after he had been there a short time Mr. Stringer was advised that he was to hand over the management immediately. Mr. Stringer, however, refused to give up his position, stating that his position was terminable only in the proper manner. On the other hand, Mr. A. R. Harris, the Managing Director of the New Zealand Broadcasting Company, states that Mr. Stringer was aware several weeks ago for the reason of his being relieved of his position.

Following upon representations made by the North Island Motor Union, "safety first" messages are to be broadcast from 2YA. A message will be put on the air nightly, one making a particular appeal to pedestrians, another to motorists, while there are also to be special messages for cyclists and all drivers. A typical one for everybody will be, "Many accidents are caused by sending the body out to work and the mind to play. Safety first."

A Wellington listener reports having received the local Station 2YA on the loudspeaker without any "B" battery being used, and also that he heard faintly 1YA Auckland and 3YA Christchurch on the phones. He was using a two-valve Browning-Drake set, and merely connected the positive and negative leads of his set together. The performance is unusual, but was evidently due to the detector and radio-frequency valves functioning weakly through the current of the "A" battery being applied to their plates.

The Wellington Hospital radio set is shortly to be installed. As previously recorded in these columns, the apparatus was secured by public subscription and will consist of an eight-valve Fada set, including four stages of radio frequency and three stages of audio frequency amplification. As there will be some ten loudspeakers and about 150 pairs of headphones for a commencement, it will be necessary to further amplify, and special power stages are to be used also. Precautions will be taken to protect the leads from interference from electrical equipment in the hospital, the method adopted being a lead covering to all cables.

The Christchurch Radio Society possesses a library of which it might well be proud. It now consists of some fifty volumes of technical and ordinary books, and is considered to be the best in New Zealand. In addition, the club has set up a work bench equipped with a full set of tools, but members do not avail

themselves of these facilities as much as they might.

Correspondents to the Wellington Press have been holding heated discussions upon the class of instrumental music being dispersed by 2YA, it being freely stated that far too much high-class music was being broadcast from this station; whereas the concensus of opinion seemed to be that light orchestral music was best suited for broadcasting, special mention being made of operas.

Anxious enquiries are being made of the 2YA people as to when the equalising equipment will be installed.

As the result of certain influence being brought to bear upon the Broadcasting Company, it is possible that 2YA may broadcast until a later hour on Sunday nights, if suitable artists can be arranged for; it was, however, stated that it would be preferable to have gramophone records than see the station shut down early on Sundays. Owing to the extra expense involved, the company cannot provide duplicate staffs to keep 2YA running every night, and it was also stated that more light orchestral music was expected shortly.



STRANGE—BUT TRUE.

You Can't Believe ALL You Hear.

Tom: "I was up at 4QG last night waiting for a friend, and I know now why 4QG's programmes are so poor. All the riff-raff of the town was up there."

Harry: "Why, Tom, who did you see?"

Tom: "Oh, there was ———, and old ———, and that Miss ———. I never saw such a poor crowd in my life. Candidly, Harry, I'd rather starve than accept an engagement from 4QG."

Three Months Later.

Harry: "Hello, Tom, they tell me you're up at 4QG."

Tom: "Yes. I forgot to mention it. I went up to see them. They put me through a test and I got three engagements. Don't forget to let me know how my numbers come over will you?"—And he was quite excited about it, too!



A DREAM OF EFFICIENCY.

Imagine every "A" class broadcasting station in Australia being brought together in some form of amalgamation or co-operation so that bands and artists could be transferred and kept continually on the move in a circuit. Think of the saving of effort and cost of a centralised control of the broadcasting services. Even opponents to unification as a principle admit that there are paramount reasons for centralisation of wireless broadcasting control because the decentralisation of operations and the accruing advantages would by far outweigh the tendency to bureaucratic methods. Overlapping of programme items would be obviated and the system would result in a one hundred per cent. improved service generally, whilst the benefits to States like Tasmania and West Australia would be incalculable.

AN OUTLINE OF 4QG PROGRAMMES FOR APRIL

Monday, April 2nd.—Sacret cantata, "Olivet to Calvary"; Part 2, studio programme.
 Tuesday, April 3rd.—Bundamba anniversary concert
 Wednesday, April 4th—A dance night.
 Thursday, April 5th—Part 1, a classical night; Part 2, Anglo Male Quartette; Part 3, gramophone recital.
 Friday, April 6th—Studio concert.
 Saturday, April 7th—Q.T.C. races; night, Tivoli Theatre.
 Sunday, April 8th—St. Stephen's Cathedral; band concerts.
 Monday, April 9th (Easter Monday)—Ipswich-Blackstone Eisteddfod.
 Tuesday, April 10th—The Studio Orpheans.
 Wednesday, April 11th—A jazz night.
 Thursday, April 12th—Mr. H. Scott MacCallum's party.
 Friday, April 13th—The Ithaca Orchestral Society.
 Saturday, April 14th—B.A.T.C. races; night, Tivoli Theatre.
 Sunday, April 15th—St. Andrew's Church of England; band concerts.
 Monday, April 16th—Brisbane Eisteddfod Choir.

Tuesday, April 17th—The Richmond Party; Miss Alice Raven's party.
 Wednesday, April 18th—A jazz night.
 Thursday, April 19th—St. Barnabas concert.
 Friday, April 20th—Mr. Erich John's party.
 Saturday, April 21st—B.A.T.C. races; studio concert; Speedway.
 Sunday, April 22nd—Ann Street Presbyterian Church; band concerts.
 Monday, April 23rd—Mr. Arthur Sharman's party; Graham & Watty.
 Tuesday, April 24th—Mr. Geo. Sampson's party; Brisbane Apollo Club; studio programme.
 Wednesday, April 25th (Anzac Day)—Anzac Day public meeting from the Exhibition Hall.
 Thursday, April 26th—The Troubadours.
 Friday, April 27th—A jazz night.
 Saturday, April 28th—B.A.T.C. races; Speedway; Lennons.
 Sunday, April 29th—International Bible Students' Association; band concerts.
 Monday, April 30th—The Studio Orchestra— Miss Alice Raven's party.

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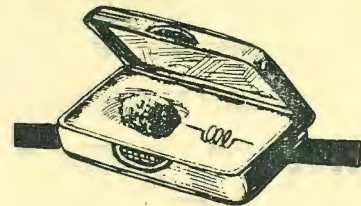
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They give the music in its full beauty — The rich resonance of high and low notes, and the subtle shading of the lower tones.

2,000 ohms— **PRICE 22/6**
Adopted as standard by the British Admiralty and by the Air Board for Wireless.

Uralium Crystal

A good crystal is equally necessary for good reception. The Uralium Crystal is sensitive on every surface, and there is none of the annoyance that is sometimes found with other crystals in searching for elusive points. It is supplied with a silver catswhisker, the use of which is recommended for maximum efficiency. Splendid results can, however, be obtained with the ordinary steel or copper whisker.



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*A Great Forward move to-
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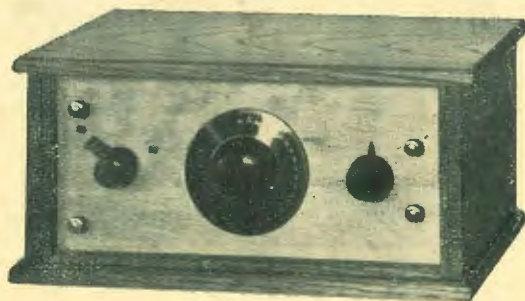
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That Responding to Requests from all over Queensland they are at last entering the Set Trade and will offer through Radio Dealers in every centre.

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