

# The Queensland Radio News

"Your Own Wireless Journal"

6<sup>d</sup>



pl. II.

Saturday, 1st JANUARY, 1926 1927

No. 12

Registered at the General Post Office, Brisbane, for transmission by Post as a Newspaper.

# Announcing



**THE NEW A.R.65  
SENIOR DRAGON**

## **AMPLION**

All metal model in chocolate crystalline finish with oxidized copper base and a New improved bakelite unit.

**£4-15-0**

Sole Distributors for Australasia  
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**Amalgamated Wireless**  
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# Sterling Value!

*and what it means to the  
Radio Enthusiast*

Both the loud speakers and headsets listed below mean a whole lot to you in getting best results free from trouble. They ensure perfect operation, and being remarkably free from trouble, mean efficient radio reception with the lowest possible outlay. We sincerely recommend them to all radio enthusiasts.



The  
**Better Speaker**  
with the new  
Diaphragm

**50/-**

The Scientific represents the best loud speaker value in Australia to-day, especially as it is fitted with the improved double diaphragm, the metal one for high notes, the other made of impregnated parchment for the low notes. It is the greatest advancement in loud speakers yet attempted.

**The "Tower Meistersinger" Speaker**

A Master Speaker of wonderful tone and big volume Used in many expensive sets in and around Brisbane by operators from whom many unsolicited testimonials have been received.

**95/-**

**THE LITTLE SPITFIRE SPEAKER**

This speaker is without doubt the most efficient speaker on the market at the low price of 35/. It represents truly wonderful value, and is a capital speaker for those who do not desire more expensive ones.

**35/**

**SPITFIRE HEADSETS**

are made of absolutely the best materials, and are noted for their extreme lightness. Adjustable headband, good fitting, a very efficient set at all times. Recommended by the best authorities. Efficient alike for valve or crystal set use.

**15/-**

**At all Home Radio Service Ltd. Authorised Dealers  
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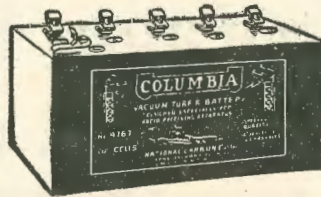
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**HOME RADIO SERVICE LTD.**

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*“B” Battery No. 4767*

**D**ESIGNED for sets having not more than four tubes using 90 Volts. Especially suitable for “soft” detector tubes. Provided with seven Fahnestock spring clip connectors giving a range from  $16\frac{1}{2}$  to  $22\frac{1}{2}$  and 45 volts. Made of extra large powerful cells.

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*Use only*

## **Columbia Radio Batteries**

*Made by the manufacturers of the Famous Columbia Dry Cell*

146

# CLYDE

## Radio Storage Batteries

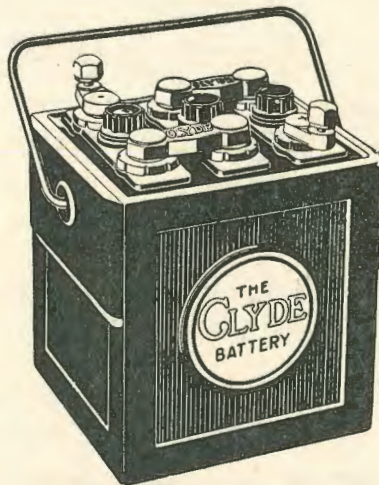
*Work well———Wear well*

Your radio set is no better than the batteries you use—and no better battery is made than the CLYDE.

Ruggedly powerful in construction and operation, made of the best materials by battery experts of long experience, and notably long lived, it is especially equipped to meet the heavy demands of continual radio usage.

Use Clyde Radio Batteries and you will know the meaning of "real radio satisfaction."

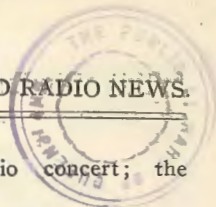
To Motor Owners: There is a CLYDE suited to every make or model of car, which may be absolutely depended on to give the fullest degree of service at the lowest possible cost. Let your next battery be a CLYDE.



Clyde radio and car batteries are obtainable from garages and radio dealers right throughout Australia. Main Service Station, 106 Goulburn Street, Sydney.

*Manufactured by*

**The Clyde Engineering Company Ltd.**  
**GRANVILLE, N.S.W.**



## Outline of 4QG Programmes for January, 1927

Saturday, January 1.—Studio concert; Gaiety Orchestra.

Sunday, January 2.—St. Andrews' Presbyterian Church; Citizens' Band; Greater Brisbane Municipal Concert Band.

Monday, January 3.—Gaiety Orchestra; the Anglo Male Quartette in a plantation sketch.

Tuesday, January 4.—Studio Concert; Annerley Orchestra; Dance music from Centennial Hall.

Wednesday, January 5.—A Scottish night; Studio Orchestra.

Thursday, January 6.—Studio Concert; Studio Instrumental Quartette; Kalua Trio in Hawaiian music; Greater Brisbane Municipal Concert Band.

Friday, January 7.—Studio concert; Federal Band; Studio Orchestra.

Saturday, January 8.—National Speedway motor cycle races; Gaiety Orchestra.

Sunday, January 9.—All Saints' Church of England; Federal Band; Greater Brisbane Municipal Concert Band; 4QG Harmony Four.

Monday, January 10.—Studio Instrumental Quartette; Anglo Male Quartette.

Tuesday, January 11.—Federal Band; Holy Cross Choir.

Wednesday, January 12.—Studio Concert; Scottish Entertainers; Studio Orchestra.

Thursday, January 13.—Kalua Trio; Greater Brisbane Municipal Concert Band.

Friday, January 14.—Studio concert; the Happy Boys in music and mirth; Studio Orchestra.

Saturday, January 15.—National Speedway motor cycle races; dance music from Lennon's ballroom.

Sunday, January 16.—Albert Street Methodist Church; Excelsior Band; Greater Brisbane Municipal Concert Band.

Monday, January 17.—Studio concert; Gaiety Orchestra; Anglo Male Quartette.

Tuesday, January 18.—Federal Band; Kalua Trio; Centennial Hall dance music.

Wednesday, January 19.—Studio concert; the Happy Boys; Studio Orchestra.

Thursday, January 20.—Cadenza Plectral Orchestra; Greater Brisbane Municipal Concert Band.

Friday, January 21.—Federal Band; Studio Orchestra.

Saturday, January 22.—Violin recital from studio of Mr. Luis Pares; National Speedway motor cycle races.

Sunday, January 23.—Wharf Street Congregational Church; Greater Brisbane Municipal Concert Band.

Monday, January 24.—Miss Mildred Bell's students' recital; Crystal Palace dance music.

Tuesday, January 25.—Federal Band; Scottish Entertainers; Centennial Hall dance music.

Wednesday, January 26.—Studio concert; Hawaiian music; Studio Orchestra.

Thursday, January 27.—Silkstone Apollo Club; Greater Brisbane Municipal Concert Band.

Friday, January 28.—Happy Boys in mirth and music; Studio Orchestra.

Saturday, January 29.—Speedway motor cycle races; dance music from Lennon's ballroom.

Sunday, January 30.—International Bible Students' Association—morning service; Citizens' Band; Greater Brisbane Municipal Concert Band; Christadelphian Ecclesia—evening service.

### REPAIRS

We do rewinding and overhauling of all kinds of Electrical Apparatus, including Armatures, Meters Phones, Loud Speakers, Coils, etc., and guarantee the work. Also Panel Engraving.

### HAMILTON & PASS

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## Instal a Reliable Accumulator

Do away with dry cells and costly replacements—buy an Accumulator.

U.S.L. 2-volt, 20 amps. . . **12/ each.**  
(For Small Sets.)

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(For Small Sets.)

Greeco 4-volt, 24 amps. . . **28/6 each.**  
(For Small Sets.)

Clyde 4-volt, 50 amps. . . **£4 each.**  
(For 3 to 6 Valve Sets.)

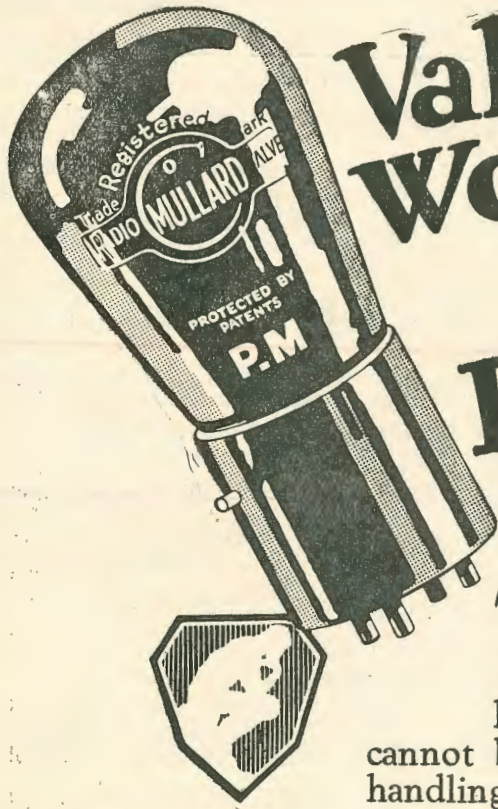
Clyde 6-volt, 50 amps. . . **£5/5/ each.**  
(For 3 to 6 Valve Sets.)

Recharging the small type, **1/ each.**

Recharging the larger type, **2/ each.**

## J. T. Greenlees & Co.

Albert House, Ann Street, BRISBANE.



# Valves with the Wonderful P.M. Filament

THE wonderful P.M. Filament offers you three times more for your money.

It is so tough that even after 1,000 hours' life it can be tied in knots and cannot be broken except by the very roughest handling—result, safety against accidents.

There is more than strength in the P.M. Filament. It has up to 3 times greater length and up to 5½ times greater emission than an ordinary filament. *This is where the P.M. Filament gives you real value.*

Another big point, the P.M. Filament requires only one-tenth ampere, giving 7 times the life to each of your accumulator charges. For great economy, great life and great results secure the valves with

the WONDERFUL P.M. FILAMENT

For 4-volt accumulator or 3 dry cells

THE P.M.3. (General Purpose) 0.1 amp. 13/6  
THE P.M.4 (Power) 0.1 amp. 13/6

For 6-volt accumulator or 4 dry cells

THE P.M.5 (General Purpose) 0.1 amp. 13/6  
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For 2-volt accumulator

THE P.M.1 H.F. 0.1 amp. 13/6  
THE P.M.1 L.F. 0.1 amp. 13/6  
THE P.M.2 (Power) 0.15 amp. 13/6

All Mullard Valves are made at the Mullard Works, Balham, London, England.

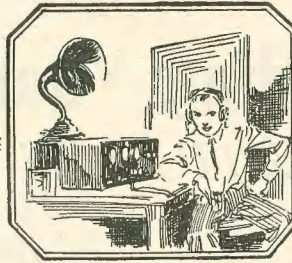
# Mullard

## THE · MASTER · VALVE

ARKS. 7

Obtainable from every Radio Dealer in Australia.

THE QUEENSLAND  
RADIO NEWS



A Magazine for Amateurs  
A. T. BARTLETT, Editor

## How Far? or How Fine?

TIME was—and not so very long ago in terms of years—when automobiles were bought on their ability to “hit” 50 miles or more per hour. The chief merit of a motor car was centred around the question, “How fast will she go?”

With the settling down of the industry and the application of the motor vehicle to commercial and social spheres, the question of actual speed fell back into a place of almost minor importance. In its stead such qualities as reliability, comfort, beauty and ease of control were demanded.

Keen automobile buyers now seek all of these latter attributes before the thought of “miles per hour” ever occurs to them. They find there is something more in motoring than the thrill of speeding. There is the solid satisfaction of comfort, convenience and reliable service.

To-day radio is passing through a somewhat similar stage to that of early automobile history. Buyers are asking, “How far will this set receive?” or “can you guarantee reception of America?” and so on. Few indeed are the buyers who ask, “How perfectly does this set

deliver speech or music?” The lure of distance appeals to the radio novice even as the thrill of speeding captured the imagination of the motorist.

To answer the popular cry, set designers are building receivers that are intended more for DX reception than for broadcast music. With competitors

issuing guarantees with two valve sets for loud speaker music from southern stations, they too are compelled to offer sets of similar abilities at similar prices.

But what is the cost? Something must suffer. Two valves cannot do the work of three or four. By working both valves at practically oscillation point, some semblance of loud speaker music is obtained, at the sacrifice of tonal beauty and natural reproduction.

The listening public is steadily becoming increasingly critical to the tonal purity and faithfulness of loud-speaker music. This is the finest thing that could ever happen. It means that the average sets of to-morrow will be designed not so much as distance getters as they will reproducers of music. The novelty of wireless is wearing off. If the science is to live, radio receivers must be regarded as musical instruments above and before everything else.



### New Year Greetings

The many kindly Xmas Greetings that have reached us during the month of December are most heartily reciprocated with sincere wishes for a Happy New Year.

*May your receptions be many  
And your blown valves few.  
May howlers, static and such like  
Never trouble you.*

Yours for Radio,  
THE EDITOR.

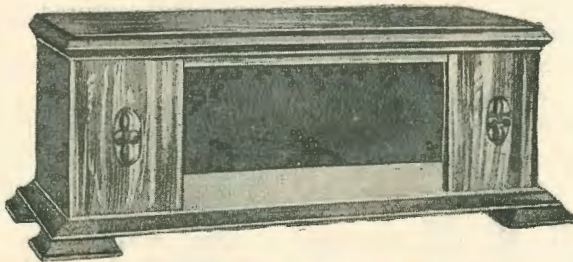
# When Building Your Own Set

## Use an EXHIBITION Wireless Cabinet

They are manufactured from thoroughly seasoned Rosewood and Silky Oak by experienced workmen. Beautifully finished. We offer Standard designs as illustrated, but also supply De Luxe.

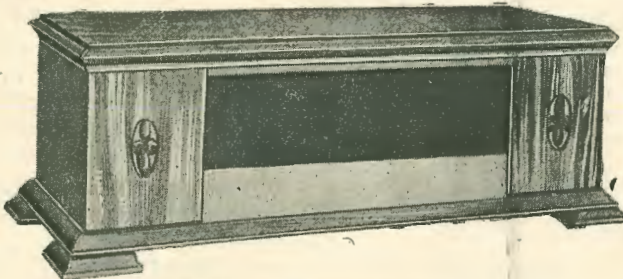
### STANDARDISED PRICES

By producing these Cabinets in enormous quantities we are able to offer them at reduced prices.



**R.W. 100 3-Valve Cabinet**

Illustration R.W. 100 is for a Three-Valve Set, the measurements being 15 inch x 7½ inch x ½ inch (Bakelite Panel Size.)  
PRICE ..... 45/.



**R.W. 101 4-Valve Cabinet**

This is a Four-Valve Model. Panel Size 18 inch x 9 inch x ½ inch.  
PRICE ..... 50/.

### PERIOD or SPECIAL CABINETS

In any size or style, designing them where necessary to harmonise with any furnishing scheme. Inquiries invited.

Complete Sets supplied where required.

### ON VIEW AT

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**IMMEDIATE DELIVERY GUARANTEED.**

**TERMS OF PURCHASE.—**Cash with order, or Goods sent C.O.D.

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**BRUNSWICK**  
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BRUNSWICK ST. - OPP. JACKSON'S BOND  
STORES - NEAR EXHIBITION - VALLEY - BRISBANE

**ROBERTS' EXHIBITION**  
**WIRELESS**  
**CABINETS**



# When 4QG Went Diving



"Uncle Ben" (left), and "Uncle Jim" (right) help to dress the Director of 4QG for the descent. The two "uncles" are holding up the big leaden boots.



The party aboard the "Champion" on her way to the "Pile Light." "Mac." (Mr. McIntosh) is seen in the centre foreground holding the microphone.



The Pile Light, Moreton Bay. It was near this spot where the descents were made.



The apparatus used on board the "Champion" for broadcasting and testing the transmission.



Mr. C. V. Woodland, 4QG's announcer, makes a hasty and rather unceremonious ascent through misadjusting the air-valve and filling his suit with air.

## Down Among the Sharks

### 4QG's Recent Transmission from the Bed of Moreton Bay

If any radio enthusiast suddenly becomes sick of his hobby, decides that he will take up deep-sea diving in its place, and needs a little advice and assistance regarding just how to go about it, he should visit 4QG.

"What has 4QG to do with diving?" you ask. Well just go along and ask and you will find out 'hat quite a number of members of the staff added a good deal to their education when they took a trip down Moreton Bay in the Government steamer *Champion*

with a view to broadcasting from underneath the water.

For quite a long time the staff of 4QG talked about broadcasting a description of the bottom of the Bay from inside a diving suit, and one Saturday last month their plans were brought to fruition, and the long-talked-of broadcast was effected.

It was not a wonderful success from the point of view of clarity, but when the enormous amount of detail and great difficulties which faced the little party

which made the attempt are taken into consideration, the fact that any sound at all was recorded was certainly a credit.

When the Director of 4QG first talked about broadcasting from a diving suit, the matter was referred to the Harbours and Rivers Department, and everybody there waxed exceedingly enthusiastic over the venture.

Mr. Fison, engineer to the Department, was particularly keen about it, and the arrangements which were made, and which resulted in the station being able to present the novel transmission to the public, were largely due to his untiring effort and energy.

A broadcast from the bed of the Brisbane River was first talked about, but Mr. Fison and Mr. Stevens (the Department's foreman and diver) declared that the muddy water would render it very uninteresting. They both declared that Moreton Bay, with its clear water, would be a good place, and suggested that the Pile Light would be an ideal spot.

Accordingly, the Government steamer Champion was made available, was fitted with the necessary diving gear, and on the Saturday morning the party embarked on her and set off down the Bay.

It had previously been decided that the party would do a little practice diving in the afternoon, and that the main dive, with its broadcast, would take place at night-time, so that a larger number of people could listen in to it. Accordingly, a submarine light was taken on board the Champion, the idea being to lower this over the side at night-time, and so illuminate the water.

Those on board the Champion included Capt Hurst and his ships company, Mr. Fison and Mr. Stevens (Harbours and Rivers Department). Mr. Robinson (Director 4QG) Mr. McIntosh (engineer 4QG) Mr. Woodland (Uncle Jim of 4QG) Uncle Ben (4QG) Mr. A. T. Bauer (operator 4QG) Mr. Alex Robertson (Editor Daily Standard) and Mr. Burn (movie photographer)

There is no need to say that the main topic of conversation on the run down the bay was diving and sharks. Mr. Robinson had said that he would go down first and the whole of the ship's company seemed to take a delight in getting him to one side and discussing sharks with him.

Just as the "Champion" left the river a large fin was sighted and there was unanimous hunt for "Robbie". When located he was taken to the ships side and shown the shark. It was pointed out that it was only a tame one, and Mr. Stevens the official diver remarked, by way of consolation, that he knew several others quite well.

Later the genial Mr. Stevens simply could not refrain from adopting a serious tone of voice and discussing the shark which the ship had pass. He said that he knew the shark and had a good cause to remember it. Some months ago, he said, the Champion was off the Pile Light and the crew hooked a big shark. It was hauled to the surface and Capt. Hurst asked his men to hold the line tight while he ran for his rifle. He leaned over the side and fired directly at the shark's head. The shark however got away. Mr. Stevens was sure that the shark he had sighted that morning was Capt. Hurst's old friend, and when asked why he remarked amidst a burst of laughter "Well, I could see the bullet marks on its tail"

However in spite of sharks, and stories of sharks, the Champion duly arrived at the Pile Light and moored a couple of ships lengths from it. A cable was then laid between the vessel and the light and

the cable between the light and the city was utilised to communicate with 4QG. Unfortunately this cable was not entirely suited for microphone work and a good deal of distortion crept into the transmission.

During the afternoon Mr. Robinson and Mr. Woodland essayed the the descent. Mr. Robinson went first but forget to fasten his sleeves with the result that his suit filled with water. He was hauled up quite unhurt, but very wet.

At his next attempt he could not manage the air valve too well and therefore was hauled up "blowing hard."

Mr. Woodland went next, and made a remarkable descent, quite as well as an expert diver in fact. His ascent however, was not so great a success. Closing his valve too tightly he filled his suit with air, and shot to the top like a balloon. The air in his suit caused him to float quite helpless on the water, and the services of two seamen were required to restore him to his correct position.

At night the expert diver, Mr. Stephens, did not seem to be quite satisfied with the efforts of the amateurs, and he prepared for the descent. A microphone was strapped to his throat inside the suit, and down he went. After walking about on the bed of the Bay for some time and giving a description of the Bay as was hauled up, and the transmission ceased.

The experiment was quite a success, inasmuch as sounds uttered below were reproduced, but the poor cable communication, the noise of the pump, and the hiss of the air from the valve all muffled the speech.

Mr. Stevens is not yet satisfied, and we understand that in the near future 4QG is arranging another stunt, and that this time Mr. Stevens will make a descent, and will speak from beneath the water without his valve working.

## OREGON WIRELESS MASTS

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

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

### ROSENFELD & Co. (Qld.) Ltd.

"The Oregon Specialists"

TIMBER MERCHANTS.

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'Phone C. 5991.

# The Reinartz Short Wave Receiver

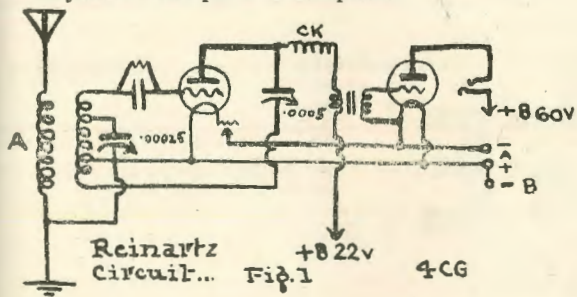
By CLIFF GOLD (4CG)

In this short article I will attempt to describe the construction of the receiver that has been in use at 4CG for about three years, and which has been found to be extremely sensitive to weak signals, and very selective. Incidentally about 80 per cent of reports on my transmission from New Zealand, Victoria, and South Australia are from amateurs using this type of receiver, and a number of these reports register strength R8 and R9. Therefore, I feel sure that any "ham" who builds this set will be far from disappointed.

The main components are:—

- 1 Low-loss variable condenser .00025 (or smaller)
- 1 Low-loss variable condenser .0005 M.F.
- 1 Bradleystat or good rheostat.
- 2 Valve sockets (to suit valves).
- 1 Audio Transformer (5 to 1 or higher ratio).
- 1 Single circuit jack.
- 1 Grid condenser .00025.
- 1 Gridleak (to suit valves).
- 6 Telephone terminals.
- 4 Battery terminals.
- 2 Ordinary terminals.
- ½ lb. No. 18 D.C.C. wire.

The wiring of the set may be easily followed once the layout of the parts is complete.



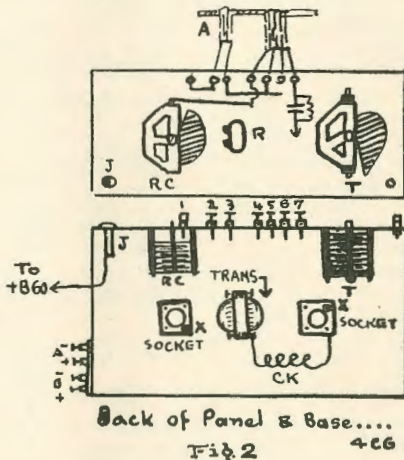
One or two points about the wiring:—(a) Keep the moving plates of the condensers at earth potential. The curved portion of the condenser in the diagram represents the moving plates. (b) See that the right potential is applied to the grid—that is, see that your grid-return is connected to the right side of your battery. In the case of UX201A valves a positive potential is best, whilst in the cases of UX200A and D4 valves the negative grid-return was found best. (c) Keep the grid-leaks as short as possible.

The choke coil (CK) is made by winding about 100 turns of No. 30 wire on a 1-inch tube, but a bit of experimenting may yield better results. I suggest that this coil be made changeable by means of plugs.

A good variable gridleak (Bradley-leak) will improve matters a lot, too.

The coils are mounted atop the panel to keep them away from the fields of the condensers, etc.

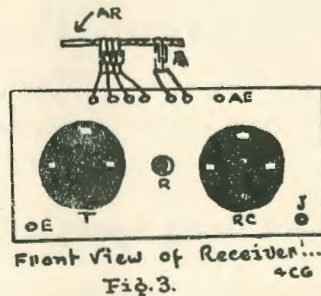
The construction of the coils is quite simple. They are made from the No. 18 wire wound on eleven nails driven in a circle 3½ inches in diameter, and are wound



Lorenza fashion, as described by 4DO in the November issue, and illustrated on page 13 in Fig. 4 of the same issue.

For 40-metre band 12 turns are necessary with a tapping at the 4th and 8th turns. Be sure that these tappings are made long enough to allow them to be placed in the terminals. For 80 metres the coils are of 36 turns, tapped at 12th and 24th turns. The coupling coil (A) consists, in the case of the 40-metre band, of five turns, and for 80-metre band 10 turns.

A Vernier dial is absolutely necessary on the tuning condenser (T). The reaction condenser is not critical.



In Fig. 2, the grid terminals are marked X. Referring to the terminals, 1 is for the aerial, 2 and 3 are for the coupling coil, 4, 5, 6 and 7 takes the main coil. The grid is connected to 7, and the moving plates of the reaction condenser (RC) to 4. The rest is self-explanatory.

Every country having amateur transmitters has been heard, including England, France, Italy, etc.

Any questions with stamped addressed envelope will be answered. (Address: 4CG, c/o "Queensland Radio News.")

**RADIO AND CABLE LAYING.****A Night at Sea.**

A series of talks have been arranged by broadcasting Station 2FC Sydney on the "Romance of Cable Laying." The lecturer will be Flinders Barr—a name which hides the identity of a well-known sea commander. On December 7th this officer gave his first talk, entitled "The Sea Bottom." On the 15th he spoke on "The Submarine Cable," and on the 23rd on "Ships and Sailors of Long Ago." It is said that "Flinders Barr's" talks are particularly interesting. Early in the New Year broadcasting Station 2FC will present "A Night at Sea." Theatrical effects will be introduced into the broadcasting studio to give a nautical atmosphere, in which studio artists will sing old-time sea chanties and choruses, the bosun's pipe will be heard, a storm raging through the rigging, and the swaying of ropes, the swishing of the sea, the creaking of masts, the banging of block and tackle—all of this will be heard without the listeners becoming the slightest bit seasick.

**RADIO ELECTRICAL EXHIBITION**

A radio and electrical exhibition is being planned to take place in the Sydney Town Hall from February 23 to March 5 next. So successful was the exhibition held in May of last year that already the whole of the space available in the Town Hall has been applied for. The Exhibition Committee, it is understood, is devising means to provide space for other radio and electrical firms who wish to exhibit.

**"Little Miss Radio News"**

This is how little Miss Coffey, of Pinkenba, dressed herself to compete in a juvenile fancy dress ball recently.

Her dress was made from covers from "The Queensland Radio News," while her hat and banner were cut from "Radio News" posters.

We do not know how the little girl fared in the adjudication, but we hope she was successful in winning a prize.

**BACK NUMBERS WANTED**

We have an enquiry from a subscriber who is anxious to secure the six following back numbers of "The Queensland Radio News" for which he is willing to pay 9d. each.

February, 1925; April, 1925; May, 1925; June, 1925; July, 1925, September, 1925.

If any reader has these numbers and is willing to sell, kindly communicate with **Mr. E. H. Johnston**, Middle Street, Cleveland, Q.

# SYNTHITE

## *The New Wonder Crystal*

A new era of crystal reception has dawned. Clearer and louder signals, fewer crystal replacements, quicker tuning—are all made possible by the discovery of the wonderful "SYNTHITE" Crystal.

### **No Dead Spots—Sensitive All Over**

You will not find a dead spot over the whole surface of the Synthite Crystal. No other crystal can claim this. No other can give such astounding results. Don't gamble with crystals any longer. Ask for "SYNTHITE" and see that you get it.

**EACH CRYSTAL IS TESTED AND GUARANTEED.**

Wholesale Distributors for Australia:

**EDGAR V. HUDSON**

**55 Charlotte St.  
BRISBANE**

The "SYNTHITE" Crystal is the invention of Mr. J. Peberdy, of Brisbane, who has been experimenting for years along this line. His efforts have been rewarded by the discovery of a Crystal that will revolutionise crystal reception.

The "SYNTHITE" has the backing of the experts. Prominent authorities have tried it and hailed it as "The World's Most Perfect Crystal."

**PRICE  
1/6**

**At All Good  
Radio Stores**

*Packed with Special  
Catswhisker*

# Queensland Now Produces An Excellent Crystal

*A Locally-Made Synthetic Crystal That Knows No Dull Spots and Yields Greater Volume*

It would appear that Queensland is about to add her first contribution to the ever-expanding lists of important radio inventions, by giving the world a synthetic crystal, which is without doubt the finest we have yet had the pleasure of testing.

The inventor of this new crystal is Mr. J. Peberdy, of Greenslopes, Brisbane, whose photograph appears on this page. Mr. Peberdy is quite a young man, who has studied and experimented with crystals and their characteristics for over two years.

His labours have at last been richly rewarded by the invention of a remarkable crystal that has not a dull spot over its entire surface, and yields greater volume. Mr. Peberdy has now placed his crystal on the market under the trade name of "Synthite," and we feel sure that all true Queenslanders will join with us in wishing this young man all the success his enterprise deserves.

In a chat with Mr. Peberdy we learned quite a lot about crystals and their manufacture. As most readers know a crystal acts as a rectifier in the reception of wireless waves, that is, it allows more energy to pass in one direction than in the other. Some crystals possess this property to a greater degree than do others, which fact led Mr. Peberdy to delve into the reason for this irregularity. Galena, a well known crystal composed of lead sulphide, is entirely useless as a detector of wireless music until it is brought to a certain stage of crystallisation. This, Mr. Peberdy discovered, was due to the lead sulphide not containing sufficient impurities, which in turn explained why natural galena is sensitive in only a few spots.

Knowing this, Mr. Peberdy set about to compound a crystal whose area of sensitivity would not be confined to patches, but would cover its entire surface and that would deliver louder signals.

In response to our request Mr. Peberdy then gave a brief but interesting description of the manufacturing process of the "Synthite" crystal.

"First of all," Mr. Peberdy said, "lead sulphide (galena) has to be fused, an operation requiring a heat of not less than 1500 degrees Fahrenheit. It is then crushed to a very fine powder, so fine that when blown from the palm of the hand it will completely disappear into the air."

"The next operation is the adding of twelve different impurities. When these are thoroughly mixed the whole of the elements are fused, again crushed, and then crystallised."

"A thorough test is then given to each piece of crystal," concluded Mr. Peberdy, and if up to standard it is then broken into pieces of suitable size and packed with a special catswhisker into a carton."

It is not claimed that this crystal can be used in combination with another crystal as a perikon detector. It will function perfectly as a detector in all manner of crystal sets. A piece of very fine gauge copper wire is recommended as the best catswhisker, but phosphor bronze wire is also suitable.

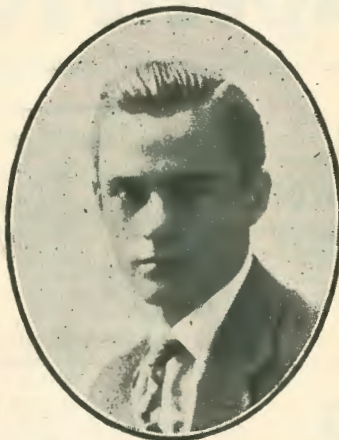
With the idea of obtaining an independent opinion of the "Synthite" Crystal, we requested Mr. Arthur Dean, of Norman Parade, Eagle Junction, a retired police magistrate and crystal enthusiast, to test it out. Mr. Dean has sent us the following letter for publication:—

To the Editor,  
"Queensland Radio News."

"The trying out of crystals has been a favourite sport with me. I have tested at various times most of the advertised varieties, and I have now tried the piece you handed me to-day as being a locally made synthetic crystal. For the purpose of comparison I tried it on a single slide tuner against a crystal which, a few weeks ago, received 4QG at Pialba (over 150 miles by air from the station) on the same single slide set.

"The crystal you handed to me gave certainly an equal, and I think, even a slightly greater volume of sound (the reception was of the mid-day music of the Carlton Hotel Orchestra, broadcast by 4QG. The quality of the musical notes was perfect, and I could not find a dull spot on the whole of the crystal. In respect of being sensitive all over it is the best crystal I have had the pleasure of testing.

"After thoroughly trying with headphones I added a one-valve amplifier with loud speaker, and the result was all I could desire.



Mr. J. PEBERDY,  
Inventor of the "Synthite" Crystal.



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Good Timber, Solid Foundations.  
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Complete

TERMS—£4-10-0 Deposit  
 £2-15-0 per month

### READ THIS PROOF—

COPY OF TESTIMONIAL.

COWRA, October 22, 1926.

The Manager,  
 Mingay's Wireless Mftg. Ltd.,  
 Dear Sir, SYDNEY.

I gave your "Unique" 5 a trial last night, and, although there was a good bit of atmospheric disturbance, all Interstate stations came in distinct with plenty of volume. I have no doubt at all but that this set will be by far the best seller on the market, and is all that you claim for it in your advertisement.

I tried it on a small loop aerial, and got all stations on it at good loud speaker strength.

Yours faithfully,

MINGAY WIRELESS MFTG., LTD.  
 DARLINGTON, SYDNEY, N.S.W.

Gentlemen,

Herewith please find Deposit of £4/10/ for one of your Unique Super-Five Radio Sets. Please send it by train or boat. If satisfactory, I am prepared to pay balance in cash or sign a Hire Purchase Agreement, also freight. If not, I will return same in good order and condition to you, and you will refund deposit less freight paid.

Sign.....

.....  
 .....

Manufactured exclusively by

## Mingay Wireless Mfg. Ltd.

56 Alma Street, DARLINGTON

SYDNEY

Agents wanted in unallotted territory

# From Stage to Studio

Announcer Halbert lends a hand on the trawler trip.



## A Chat with a Shy Announcer

(By W. P. H.)

I had heard his voice on the air from an aeroplane 11,000 feet up, and from a trawler at sea, and was determined when the first opportunity occurred that I would know him in the flesh.

With this idea in view I dropped into the station 2FC the other night and made the acquaintance of Laurence Halbert, one of the 2FC announcers. I found him a shy sort of a chap, and not very willing to talk about

himself, but I felt that the man who took on broadcasting 11,000 feet in the air and also went to sea for three days on a trawler on a similar mission, could tell a good story if he was once persuaded to talk.

I heard that Halbert was once on the stage, and I turned the conversation in this direction in hope of getting some reminiscences. After a little leading he began to talk more freely, and let me know that he had been for some 12 years on the stage playing in most European countries. He had run the whole gamut from Pantomime to Grand Opera.

We got on talking about different parts of the Old Country we both knew well, and he told me of the famous 6 a.m. performances in the Rhondha Valley, where he had performed at that ungodly hour to the miners, and where nobody outside a Welshman was considered a singer. Then getting on the common ground again, we talked about the Javanese in Dyjocia, and we laughed together over many similar experiences with the Dutch, French, Malaysans, I found that he had been through the East with the Royal Opera Company and he told me many of the ups and downs of his two years' tour with the Company.

His trips into the countries where the sun shone told their tale, for on returning to London he pined

for warmer climates. Africa and Australia were always in his mind, and when a opportunity presented itself to tour South Africa with Thurston Hall—who at a latter date visited this country—he jumped at the chance. Following this Halbert joined up with the Renee Kelly Company and toured for a further period in South Africa.

As he put it, "all good things ultimately come to an end," and the day came when he had to decide whether he would return to England, or strike out on his own and visit Australia. It was a case of London with rain and fogs, or Australia with its sun shine—and Australia won the day.

Halbert then told me of his delightful trip to Sydney, and of his surprise at the sights presented by the capital cities of Australia. Of course, he gave me the usual old jar about "Our 'Arbour."

He then visited New Zealand and upon his return to Australia became associated with 2FC—a first as a soloist, and then as an announcer.

Halbert then went on to say how they tried him out on the prices of potatoes and onions, and also how they joked him about his pronunciation of some of the aboriginal names attached to country towns; also how, after many months of severe trial, he was ultimately considered far enough advanced to be given night sessions in the studio.

We then chatted on the difference between work on the stage and work in the studio. I asked Halbert if he found it as difficult to please the unseen audience as it was the crowd who attended in the theatre, and he replied that the main difference lay in the fact that the theatre audience, when critical, said things—while the radio audience wrote things. He told me that broadcasting was a very severe trial for anyone who was super-sensitive. When a member of an audience in a theatre disapproved of you he could hardly disturb the show to the point of telling you what he thought, whereas the radio fan sits down in his calm moments and puts a letter into the station which, when it has been read, makes you feel like a quick trip to the Gap. "However, there is always the satisfaction of knowing that no one is exempt from criticism in this game," he added.

I asked him whether he liked announcing, and he said: "I do, indeed." There is a wonderful field for the imagination, and a boundless supply of new experiences.

Halbert told me that in both his aeroplanes and trawler trips the excitement and novelty carried him through.

Asked if he would like to go back again to the old stage life, he quickly replied: "No, I much prefer to remain in broadcasting.

At this moment I heard a buzzer in the studio, and took this as a hint that it was time for me to leave. As I passed out of the door I heard Halbert's cheery voice saying, "Hello! Hello! 2FC Sydney speaking—Good-night everybody!" and I felt that I had now added to my list of acquaintances, another young chap well worth knowing.



## Indian Singers at 4QG

On Wednesday night, December 15th, a party of native Indians from the steamer "Nuddea" visited

the studios and provided a very novel entertainment.

The singing was rather mournful, due to the fact that their octave contains 22 semitones. One of the accompanying instruments was a harmonium or small organ, which was made in Calcutta and probably purchased in a native bazaar. It is played with one hand and pumped at the back with the other. It has no legs, and the player squats on the ground with the organ between his knees. The peculiar point about it is that not more than one person can sing to it. The man who plays the organ must sing to it.

Two drums formed the rest of the accompaniment. They are known as tabla, and are made either out of wood and skin or clay and skin. The top part is divided into three different thicknesses. The extreme outer rim having four thicknesses of skin. The second ring from the outside has two thicknesses and the inner ring a single thickness. This inner ring is usually black to mark the centre. The skin is tightened by pieces of wood run through strips of hide and three different notes are tuned to the organ. The shape could be aptly described as a plum pudding turned upside down. The actual cost would be approximately 6d. The two drums are played together, making six different notes.

Their voices were not unmusical, and the whole entertainment proved very interesting.

# The 'BLUE SPOT' Aristocrat Headphones

Weight 4½ ozs. only

Double Headphone  
4,000 ohms

The Ideal Headphone for Detector and Long Distance Reception  
"BLUE SPOT" is The Hall Mark of Perfection

The Acme of Comfort  
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PRICE, 27/6

Very Sensitive  
As Light as a Feather



## The "Blue Spot" MULTIDYNE-COIL

Indispensable for every radio amateur. The Universal All-wave Receiving Coil, covering all wavelengths from 160 to 4300 metres. One single Multidyne All-wave Coil replaces any type of the conventional plug-in coil.

The Multidyne All-Wave Coil is equally suitable for use on either a crystal or valve set, and as a primary, secondary or reaction coil. PRICE, 18/.

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STANDS FOR QUALITY.

A FEW WORDS TO THE RADIO DEALER.

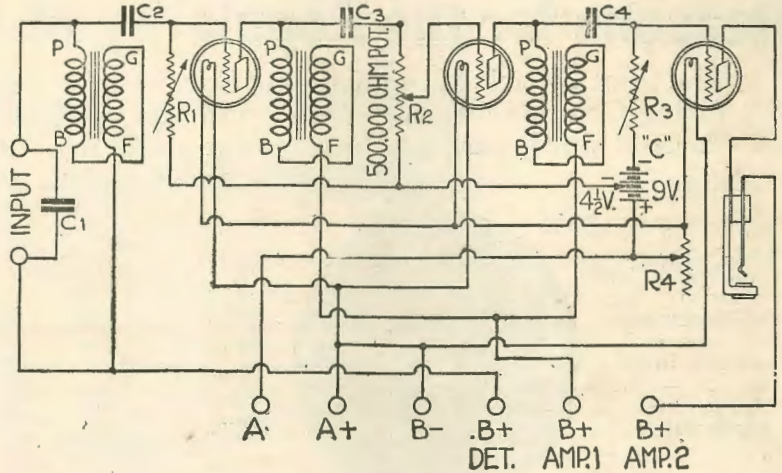
You might ask why should I stock the "Blue-Spot" Goods? The emphatic answer is that these are the goods which you can offer to your customer with every confidence; and even more than that. Your customer, who has bought "Blue-Spot" goods becomes your friend who will recommend you amongst his friends, and who is sure to return again. The guarantee label with which each package is sealed, stands for the most careful testing while being produced, and this again comprises the guarantee that your customer gets only goods which are reliable in every way and which he is sure to buy again.



# A Readily Constructed Impedance Coupled Amplifier

By L. S. HILLEGAS-BAIRD, 9HO

(Associate, Institute of Radio Engineers, and Members, The Radio Club of America)



It is generally recognised that while present day transformer coupled audio amplifiers deliver amplification and are electrically efficient for a given frequency, they fail to pass many deep notes of bass instruments regularly featured in broadcast programmes. Most notes below 100 cycles are amplified imperfectly if they come through at all.

Because of their superiority in this respect, resistance and impedance coupled amplifiers are proving popular among set builders, notwithstanding the necessity of using another tube to boost volume and a higher plate voltage. The demand is for quality and full rounded tones.

A scheme to readily convert a standard transformer amplifier to choke coupling, utilising old parts is suggested by engineers of the Central Radio Laboratories, Milwaukee. From the accompanying diagram it will be seen that the usual two transformers are in series forming three chokes. It is also possible to use the secondaries alone in case three transformers with their primaries burnt out are available. Tapping the coil as is done with commercial auto transformers is not essential for good results and because of the difficulty it is not recommended that an attempt be made to cut into the windings.

The by-pass condenser C1 has a capacity of .001 mfd. C2 and C3 are not critical, in capacity. They may be from 0.1 to mfd. but C4 must be kept small, say from .001 to .00025 mfd. as a larger one, although it makes for more volume, will tend to block. The three grid resistances are each 500,000 ohms.

To control volume the centre grid resistance should be variable. The non-inductive 500,000 ohm Modulator made by the Central Radio Laboratories is recommended. Resistance control is preferable because the surges of current caused when jack circuits are opened and closed are a source of danger to the winding of the chokes. These currents frequently cause burn-outs in transformers and chokes. With resistance control, furthermore, any desired volume

from a whisper to maximum loudness may be obtained.

By using this plan, a satisfactory impedance amplifier will prove both simple and inexpensive to build. There will be an immediate improvement in tone quality, and with 201A tubes, the three stages of impedance will have approximately the same amplification as two transformer stages.

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**Is Better Known—but that is YOUR fault.**

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Electrical Engineer,  
Stanley Street, Wooloongabba  
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Sets made just as you want them.  
Parts at City Prices.

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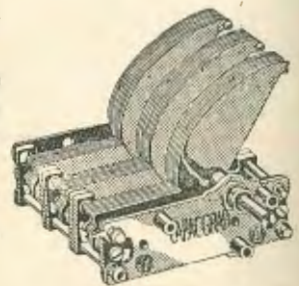
The Pilot Electric Manufacturing Coy. is the Largest Radio Parts Manufacturing Company in the World, and can produce all Standard Radio Set Parts of sturdy and reliable types at prices which no other manufacturers can compete with.

The Pilot Kilograd vernier dial—calibrated both clockwise and anti-clockwise on the one dial—moulded in pure bakelite—with friction control—absolutely no backlash, and only . . . . . 7/6



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No. 8113, 13 plate . . . .	£0 14 0
No. 8117, 17 plate . . . .	0 15 9
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No. 8117-2, 17 plate double Condenser . .	1 14 6
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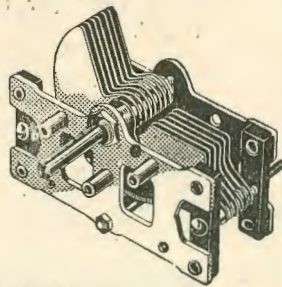
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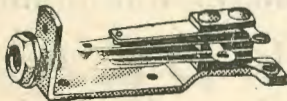
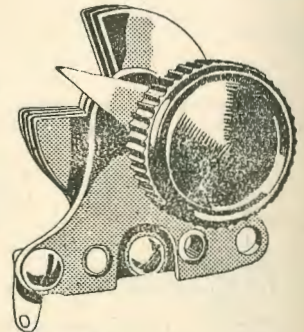
Straight Line Frequency, Aluminium Plate.

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No. M.7. Mid-get condensers, 7 plate 5/9

No. M.7. Mid-get condensers, 13 plate 7/-



### JACKS.

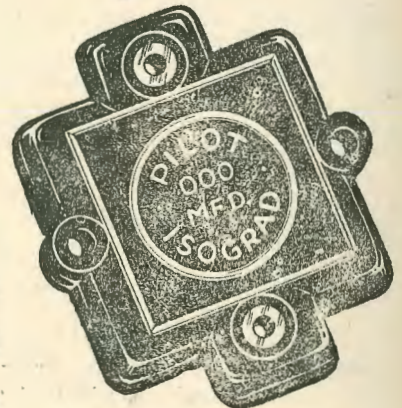
Pilot Single Circuit Jack, No. 1161 . . . .	£0 2 3
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No. 200, 200 ohm Potentiometer . . . .	0 5 6
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	s. d.
.001 . . . . .	3 0
.002 . . . . .	3 0
.006 . . . . .	3 9
.0005 . . . . .	2 9
.00025 . . . . .	2 9
.00025 with clips . . . . .	2 9



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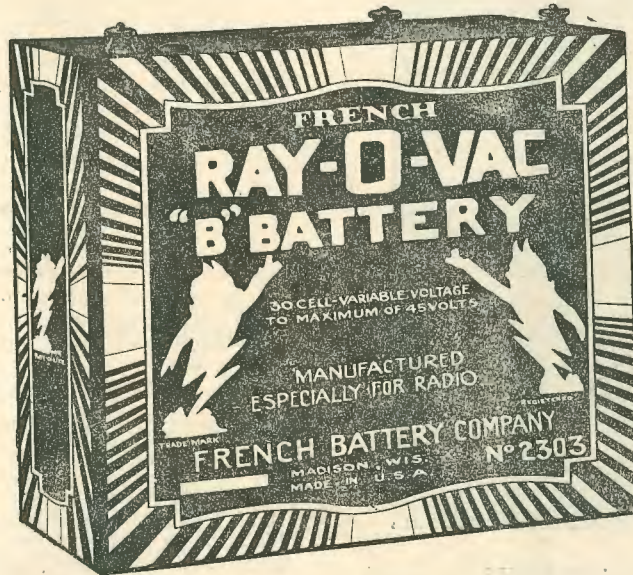
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# Look Inside Any Ray-O-Vac Battery



*Note its unusual  
Construction*



No. 231R.

The Exclusive construction of Ray-O-Vac "B" batteries combines a number of characteristics which easily distinguish them as leaders in the "B" battery field. Nine features are outstanding:

- 1.—Zinc can of rolled sheet stock.
- 2.—Water and acid proofed egg grate partition.
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- 4.—Insulating compound between cells.
- 5.—Waterproof outer container.
- 6.—Screw Post Terminals make positive connections with wire, eyelet or spade connector.
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No. 9303—The Master Ray-O-Vac 45 volt; double the amperage of ordinary 45	£1 16 0
No. 2301—45 volt flat, with 7 tappings	1 6 0
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**MR. ALFRED ANDREWS.**

(Announcer at Station 3LO, Melbourne.)

Besides being the official announcer for the station, Mr. Andrews frequently appears on the programmes in vocal numbers.

## Wavetrap Wanderings

"P-One" writes:—

Successful in tuning out Station 4QG on a two-valve P.1 set and wave-trap, was wandering somewhere between 4QG and 2BL about 9.30 on Wednesday night (Dec. 8th), when amongst others the following bright remarks were heard at good phone strength:—

Hello, Charlie . . . . . give us the O.K.  
 . . . . . that's good . . . . . I was in touch with  
 2WG Tenterfield just now . . . . . By Cripes!  
 you want to go to the Wintergarden in Bris-  
 bane this week the band is great . . . . . wait  
 on, listen for 4QG's carrier . . . . . that's the  
 Savoy Orchestra . . . . . Just a minute, Charlie,  
 I'll give you 3LO . . . . . How's that . . . . .  
 marvellous, isn't it? . . . . . give you some  
 music now. . . . ."

We then had a flute solo followed by the gramophone version of "That Certain Party"—all of which was very clear and most enjoyable. They close down about the same time as 4QG

Now, I am a very amateurish amateur, but I did think I was doing well to cut out 4QG four miles from his aerial with two valves (it is the novelty that attracts not the particular desire to chop him out), and when after having reached my objective, our obliging friend kindly supplied his cobber "Charlie" with 4QG all over again. I thought it very novel indeed. I wonder who it was—one of the test candidates or perhaps a Joey?

## Improve Your Reception

with

# EDISWAN Valves

(Stocked in English and American Caps)

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

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

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Wholesale—

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

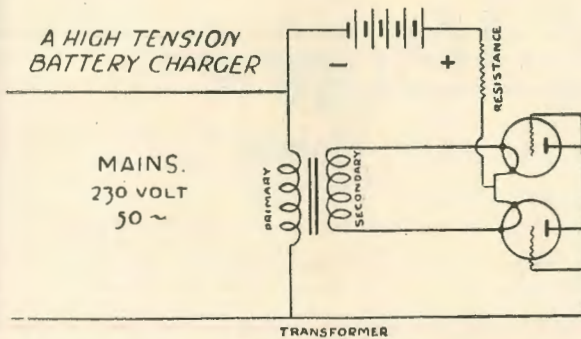


TYPES "A," "R,"  
and "R."

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



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



## A High Tension Battery Charger

By HAROLD D. WALSH (4HW and 4WR)

For some time an electrolytic charger has been in use at the writer's transmitting station to charge the 100-volt accumulator which supplies plate voltage for the speech amplifier used in telephony transmission, also for the various receiving sets. The load on this battery is quite heavy, a recharge being necessary every two weeks.

Electrolytic cells are, at the best of times, rather messy, so it was decided to discard this method of charging. Thermionic valve rectification was the system decided on, and a series of experiments were carried out to discover the most efficient combination, various valves, including a Tungar bulb, 5-watt tubes, etc., being tried.

The system finally adopted was to use two 201A tubes to rectify the alternating supply. It was found that the valves could be lit very efficiently by connecting in series to an ordinary bell-ringing transformer. One side of the mains is connected to the grids and plates of both valves, the other side to 'B' battery negative.

The "B" battery positive is connected through a suitable resistance to the centre point of the valve filaments, that is, where the series connection is used, to the wire connecting the filaments of the two valves.

The resistance mentioned above is to reduce the charging rate to a suitable value; about 500 ohms is required, and the resistance must be able to carry the charging current (about 60 milliamps) without undue heating. The writer used a 600 ohm porcelain mounted fan resistance, such as may be obtained from any electrician for a shilling or two. The transformer used was a General Electric 5-watt affair, and cost about 7/6.

The battery should be disconnected from the set before charging, as the negative lead is usually connected to earth, and the live side of the mains might also be connected to the negative lead, which would result in "fireworks." Remember, too, that you are dealing with high voltages, and a 240-volt shock might leave unpleasant memories. The best safeguard is to use insulated wires throughout.

The charger may be mounted in a small cabinet or on a baseboard, according to the taste of the maker, clips being provided for the battery, and a

flexible cord with plug for the lamp socket. The diagram should make all connections clear to the veriest novice. It should, of course, be noted that this apparatus is not suitable for direct current supply.

## FOR SALE

Combination 4-Valve Wireless Set and Phonograph in silky oak cabinet, 42in. high, 41 x 21. Bradleystats -leak -ometer, Walton geared condensers, dials; Gerrard super-motor running in oil—plays all makes of records, orthophonic horn as described in "Popular Science," December, 1925.

Complete with valves, A accumulator, B batteries, aerial, 24 records.

First cheque £55 takes the lot, packed f.o.b. Bundaberg

A. VUICHOUD, Woongerra St., Bundaberg. Q.

## FOR SALE

Three-valve Set in maple cabinet, Amplion Radiolux speaker, 6-volt 100-amp. accumulator, double capacity B batteries; also odd junk. Guarantee 10 stations on speaker. Owner building superhet. Worth £45. Take best offer. Must sell. "Super," c/o "Queensland Radio News."

**Logging Them All!**

on his "AENOLA"

Twelve Months Unconditional Guarantee

## AENOLA Receivers

Cheapest Prices — Best Parts Used

NOTE THE PRICES:

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

These prices include Dull Emitter Valves, Batteries, Headphones, Cabinet, Aerial Equipment and Coils. Loud Speakers from £2 upwards extra.

Demonstrations and Installations Free

**A. E. NEWNHAM**

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# USE YOUR HEAD

Cut Prices, Slander, Hearsay, Habit,  
may cause you to buy other Valves

**BUT—**

for the sake of your sanity and best results

## Buy **DE FOREST** Valves

and have no regrets

### FOR SALE EVERYWHERE

### De Forest Valves

TYPE D.V.5.—Takes 5 volts,  
at  $\frac{1}{4}$  amp. on filament.

**12/-**

Plate voltages, detector 18-22 $\frac{1}{2}$   
volts.

Plate voltages, amplifier, 60-  
150 volts.



D.V.5.  
Filament 5 volts  
.25 amp.



D.V.3.  
Filament 3 volts  
.06 volts.

### De Forest Valves

Type D.V.3.—Takes 3 volts at  
.06 of an amp. on filament,

**13/6**

Plate voltage, 16-22 $\frac{1}{2}$  volts,  
detector.

Plate voltage, 60-120 volts,  
used as an amplifier.

Both Types Fit Standard American Socket.

Factory Representatives:

## INTERNATIONAL RADIO CO. LTD.

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Queensland Distributors:

HOME RADIO SERVICE LTD. "COURIER" BUILDINGS, BRISBANE

# Personalities



Harold Hobler (A4DO), our genial friend from Rockhampton, was recently washed down by the rain on his trip through to Sydney. Harold and his father were making the journey by car, and we didn't envy them one bit. Whilst in "Brisie" Harold called around to renew acquaintances with many of the local 4's.

Mr. J. Fegan, of the South Australian amateurs, is now stationed in Brisbane, and contemplates getting on the air as soon as his license is fixed. Mr. Fegan brought with him some power bottles as an Xmas gift to 4CM. Doubtless the bill will come along later.

Mr. J. P. Fry, M.L.A., who resides at Dornoch Terrace, has adopted radio as a method of recreation from parliamentary worries. Quite a large number of M.L.A.'s on both sides of the House have lately interested themselves in radio; it is to be hoped that the Radio Inspector experiences no difficulty in chasing up their license fees.

Leighton Gibson is at present building the short-wave transmitter and receiver for the Townsville Radio Club. Rumour has it that the first member of this progressive club to pass the amateur examination will be placed in charge of the outfit.

U6AS—Mr. Lucy, of San Francisco, was recently in Brisbane for a short period. Elliott (4CM) and Lucy created a new long-distance radio-yap record—for they discussed short-wave topics for three days and three nights, adjourning only for meals.

Dr. Frank Lukin, of Hendra, recently bought a crystal set. That in itself is nothing remarkable, but ere a week had elapsed the doctor had no fewer than three crystal sets of different types, upon which some enthusiastic experiments are now being carried out. Even doctors are not immune from the dread sting of the radio insect.

When "Uncle Jim" Woodland, of 4QG, recently essayed to describe the beautiful and unusual sights that are to be seen beneath the blue waters of Moreton Bay, he little thought that a diver's suit was such a cumbersome thing to wear, and an intricate thing for a novice to successfully manage. For some days before 4QG put over this novel transmission, Mr. Woodland could be seen spending his mornings at the Booroodabin baths, endeavouring to establish new submarine endurance records.

We are sorry to learn of the recent misfortune of Mr. C. Little, radio engineer of Wireless House

Ltd. Mr. Littler developed a sudden affection of the right eye, and for some days there was a probability of losing the sight. Mr. Littler has undergone a severe hourly treatment, and reports to hand indicate a slight improvement. We sincerely trust that "Bob" will soon be well on the road to a complete recovery.

The Radio Inspector has some very modern transmitting and receiving apparatus installed at the G.P.O. Brisbane for use in the practical tests for students entering the Commercial Wireless Examination.

Mr. Chas. Simpson, of the "Simbell" Photographic Service, Coolangatta and Tweed Heads, has a fine five-valve Neutrodyne installed at his shop. "This," smilingly asserts Charlie, "serves a dual purpose." It entertains the folk who come into the shop and it's mighty good company for me when I work back late at night."

Mrs. T. H. Fitzgerald, of the Queensland Country Women's Association, is to be complimented on the successful organisation of a fund to cover the cost of a wireless installation at the Brisbane Children's Hospital. Practically every ward in the main building is wired up and connected to phone plugs at each bedside, allowing the little sufferers to while away a few hours listening to the bedtime story-tellers and studio music. This scheme has been successfully carried out in the south, where doctors affirm that radio has exerted an effect for good upon the little patients. We trust that such results will be achieved at the Children's Hospital in Brisbane.



## Attention!

### Brisbane's Only Radio Service Station

All makes of "A" and "B" Batteries charged, repaired and tested.

Batteries called for, and returned when fully charged. If required, a fully charged battery will be left in place of your own.

Very latest charging equipment, batteries automatically regulating their own charging rate, consequently there is no possibility of your battery being improperly charged.

If your Radio Set is not functioning satisfactorily our service man will test it and make any adjustments in the circuit that may be necessary.

## Raymond & Blackboro

182 Roma Street, Brisbane

Phone C 7511

(opp. Railway Gates)

## DULCEPHONE Receiving Sets

The "Dulcephone" receiving sets have met with a very ready demand throughout Queensland during the year 1926. These sets are manufactured by the well-known firm, Wireless House, Ltd., Edward Street, Brisbane, whose engineers are well abreast of all developments in wireless, and, therefore, are able to incorporate any new developments in their sets.

The popular three-valve "Dulcephone" has found its abode in many homes in Queensland, and is operating successfully in far northern towns. One client has reported logging thirty-eight stations on this particular type of set, including Station JOAK, Japan.

The "Dulcephone" 5 and 6 valve sets are worthy of special mention, as the workmanship is particularly fine.

The radio frequency amplifiers in both the five and six valve "Dulcephone" receivers are highly efficient. This is due to a special method of oscillation control, combined with highly efficient radio frequency transformers. The two radio frequency amplifiers are also biased  $4\frac{1}{2}$  volts negative to prevent grid current flowing, as well as to keep the "B" battery consumption down to a minimum.

Volume may be controlled from a whisper to full volume on the speaker by the means of the 400 ohm resistance, which acts also as an oscillation damper.

A high degree of selectivity is obtainable from



these receivers owing to the use of a variable aperiodic aerial coil, combined with a special type of high frequency transformers.

The "B" battery consumption, under normal working conditions, is only 12 m.a. in the case of the five-valve, and 15 m.a. for the six. This compares more than favourably with many imported sets, whose "B" battery consumption is generally in the vicinity of 20 to 30 m.a.

Particular attention has been paid to the audio-frequency amplifiers, only high-class transformers and resistance capacity coupling being used. It is generally recognised that a well-designed resistance capacity amplifier will amplify all frequencies from 150 to 10,000 cycles evenly, and will amplify as low as 50 cycles with only, approximately, 10 per cent. loss.

From the foregoing, it will be apparent that this firm is endeavouring to place a musical instrument in the hands of the radio public, at a figure within the reach of everybody. The prices, including Amplion A.R.19 or Primax loud speaker, are £55 and £60 respectively.



**"MISS WARATAH"**  
(Miss Eileen McLennan)

Who tells the stories to the children every Saturday afternoon from Station 4QG. She is the latest addition to 4QG'S staff of Uncles and Aunties and is a great favourite with the children who listen to 4QG'S matinee session.



### JAPANESE MUSICIANS AT "JOAK."

We have received this photo from a Japanese subscriber to our journal. It shows a Japanese "string sextette" playing before the microphone at JOAK. In the land of the Lotus Flower, where the "bob" and "shingle" are considered highly improper, Japanese maidens take special pride in their luxuriant growth of hair. A glance at the photograph shows that they do not look at all uncomely.



# The Filadyne One Valver

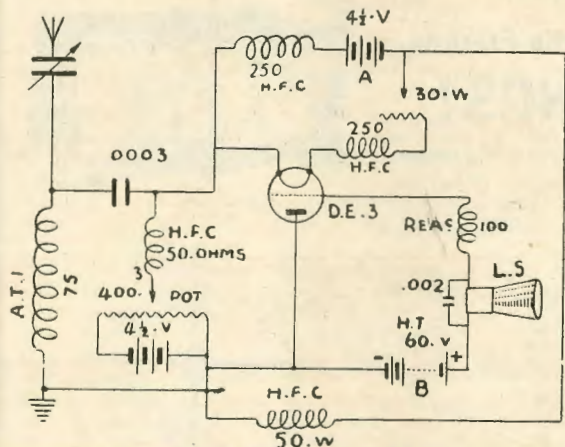
*A New Single-Valve Circuit Designd on the Filadyne Principle*

**B W. J. HUNTER.**

In this article is described a new Filadyne circuit, which delivers perfect loud speaker results from 4QG and which is both easily and inexpensively constructed

Quite apart from reasons of economy, any reduction in the number of valves that can be used to produce a certain result is distinctly advantageous.

The original Filadyne (2-valve) circuit published in the December issue of the "Queensland Radio News," is a remarkably efficient circuit, but in the writer's opinion the improved one-valve arrangement is capable of greater performances. Furthermore, it has the stability of a straight-forward circuit.



**FILADYNE ONE VALVE**

For the benefit of intending constructors the writer would state that they may expect much of this Filadyne and they will not be disappointed. His personal experience is that a large Gecophone loud speaker can be worked, so that 4QG can be heard in any part of a large house without the slightest distortion.

It is not so very long ago when four valves in a conventional circuit were required to bring in the south at good loud speaker strength. Using the Filadyne described in the last issue of "The Queensland Radio News," three valves delivered full loud speaker volume, but using the hook-up described herewith only two valves are needed to render the same results.

If intending to hook-up a L.F. stage on to this Filadyne, do not make the mistake of most people in using a very high ratio transformer. Use a 2 to 1 ratio with plenty of wire, and see that the impedance of the transformer suits the impedance of the valve you intend to use, and remember, it is the duty of the valve to amplify—do not leave this work to the transformer.

The H.F.C. on the potentiometer and the H.F.C. from the filament to earth may be wound on a small wooden bobbin with fine wire to about 50 ohms.

The writer would be pleased to hear from any amateurs who are getting good results from these Filadyne circuits.

Address: W. J. Hunter, c/o Norman Bell & Co., Adelaide Street, Brisbane.



**Radio  
'A' & 'B'  
Batteries**

*The Secret of Perfect Reception*

A British Battery from the well known and the earliest established electrical equipment manufacturers in the British Empire.

**"A" Batteries.**

6 Volt 24 amp hours . . . . .	£3 5 0
36 " " . . . . .	3 15 0
48 " " . . . . .	4 10 0

**"B" Batteries.**

60 Volt . . . . .	£5 5 0
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**C.A.V. Battery Service Station**

(Barnes Auto Co.)

Corner North Quay and Queen Street.

**SUBSCRIPTION FORM**

**"QUEENSLAND RADIO NEWS."**

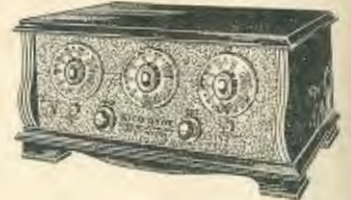
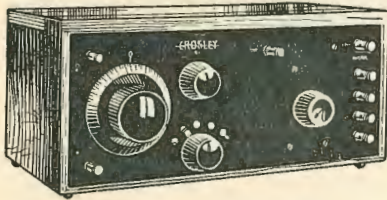
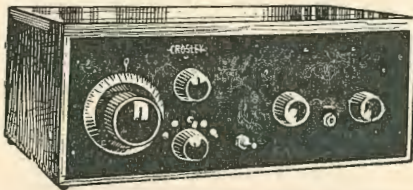
Box 1095N, G.P.O., Brisbane.

Please send me the "Queensland Radio News" for 12 months. I enclose cheque or P.N. for 6/6.

Name .....

Address .....

# CROSLEY



## To Our Many Radio Friends GREETINGS!

*May 1927 be a Year of Happiness  
and Great Prosperity to You*

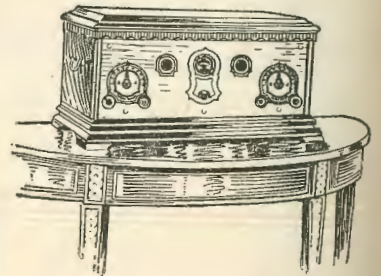
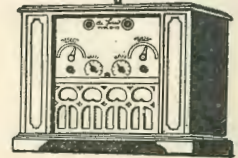
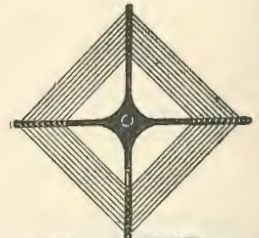
**D**URING the past year we are pleased to have been able to supply you with many high class Radio Products, some of which are hereon illustrated.

For 1927 we have accepted agencies for a number of new lines of undoubted quality, and you would be well advised to call and view the new range at the earliest opportunity.

Our list now comprises many good business getters which will help you to keep in closer touch with your clients.

Let us have your enquiries.

We thank you for the business with which you have favoured us and assure you that your demands shall have personal and prompt attention at all times



# Brandes



## Matched Tone Radio Headsets



## Home Radio Service Ltd. Courier Buildings, BRISBANE

Phone: Central 6143

Telegrams: "Homrad"



## Broadcasting Notes

From Sydney Town

### RADIO MIX-UP—LISTENERS PERPLEXED.

The New Zealand Press is excited about hearing the London Broadcasting Stations relayed from Sydney. The whole thing, of course, is a big radio joke, but like most jokes, the further it goes the more complicated becomes the situation.

What really happened was this—both the Sydney A class broadcasting stations (2FC and 2BL) recently obtained some excellent gramophone records of parts of the broadcast programme of the London and Daventry stations. Although the announcers explained what was being broadcast, many listeners in New Zealand who tune in to the Sydney stations regularly, seem to have missed the announcement and accepted at its face value the statement, "This is 2LO London calling."

All over New Zealand enthusiastic listeners rushed off to their favourite newspapers, which published accounts of how Mr. Blank had picked up the London programme.

The "Wellington Post," in a facetious article at the expense of its contemporaries, remarks: "The listeners who fell into this error accepted a muddle of time and space incalculably greater than anything the wildest dabbler could imagine. The time at which the broadcast began was noon in London, but when it ended 20 minutes later the clocks struck 12. London and Daventry stations first put on luncheon music at a restaurant, and then switched on to the Lord Mayor's show, but the enthusiastic reporters overlooked the fact that the Lord Mayor's show was held weeks previously. The listeners were entertained by the Savoy Orpheus in a 50,000 h.p. aeroplane, and were brought to earth by the weather forecast asserting that rain would certainly fall in Manchester. The microphone then adjourned to Shepherd's Bush to hear the nightingale in song at mid-day, and the next episode was a visit to the office of the "Daily Mail" to see yesterday's paper in course of preparation. Then followed a slice out of the Military Tattto at Wembley (which happened months ago), and finally the announcement was made, "We are now closing down until April 1st."

From the point of view of listeners the gramophone record of the British stations was most interesting, being made up of small portions of a dozen excellent programmes, but it has to be borne in mind that the broadcasting stations were sending out a record and not re-broadcasting the London stations. The latter will be done in the near future, but technical conditions are not yet ripe for it.

### THEOSOPHICAL RADIO—SYDNEY TO U.S.A.

The Theosophical Broadcasting Station, 2GB, Sydney, has arranged to transmit a special programme on the evening of January 1st for listeners in America. The time of the programme will be from 5 to 8 p.m., which will be heard in New York—assuming nothing goes wrong—on New Year's Eve—that is to say, "the day before it is sent." The idea prompting this transmission is to communicate with Dr. Annie

Beasant, leader of the Theosophical movement, now in America with Krishnamurti, who shortly will appear in the role of a world prophet. Cables have been sent to the United States asking listeners to be on the look-out for this transmission, and it is expected that a message will be received in Sydney by mail from Dr. Beasant in time to be broadcast for Theosophists and other listeners, both in America and Australia to hear. At Christmas time Station 2GB broadcasted Christmas carols and "The Messiah."

### RADIO PARISH BROADCASTING RELIGION.

Every now and then messages reach the various Australian broadcasting stations, showing the wide sphere of influence of the religious services that are broadcast each Sunday. Last week the name of a popular preacher was mentioned to a clerk in the money office at Perth, and the latter remarked, "Oh, yes, I have often listened in to Rev. Mr. Hammond at Station 2BL."

A surprising number of people find radio their only means of keeping in touch with the religious world. Recently a bush missionary noticed a radio set in a boundary rider's hut west of the Lachlan River, and he was informed that the owner always listened to the Sunday evening service, and did not cut off until the last item on the evening programme was completed.

### AUSTRALIAN RADIO—NEW ZEALAND PLEASED.

Radio listeners in New Zealand continue to derive their chief source of entertainment from the Australian stations. By the last mail, the Theosophical Station, 2GB, Sydney, received a letter from the radio writer of the "Dominion Daily Newspaper," Wellington, expressing the appreciation of the readers of that paper of the concerts broadcast from 2GB. "The transmission has a pronounced resonance and natural tone which distinguishes it," says the writer, and on the average five-valve receiving set loud-speaker reception is obtained, providing that the situation of the receiving aerial is favourable." The writer asks for advance copies of the stations' programmes, so that they can be published daily in the "Dominion."

### BOYS ON RADIO—BROADCASTERS' CHOIR.

The boys' choir which has been in training for the past three months for broadcasting Station 2BL, Sydney, is at last on the air. The lads give an excellent account of themselves, much to the satisfaction of Mrs. McIntosh, the lady who trained them. On this account they were included as a feature of the station's Christmas broadcasting programmes.

### A RADIO CHRISTMAS—DUBOIS MASS BROADCAST.

Many churches were represented on the Christmas broadcasting programmes. Listeners to 2FC on Christmas Day heard Dubois' Mass rendered by St. Patrick's Choir.

The Offertory was sung by Father Ryan, S.M., who is a visitor from New Zealand. He has a very fine silvery tenor voice. Miss Lynn Mills sang soprano, and the contralto was Miss Mary Bourke. Mr. Arthur Champion (tenor) and Mr. Chas. Snodgrass (bass). The leader of the orchestra was Miss Kitty Burton, and the conductor Mr. W. H. McCarthy.

On Christmas afternoon a programme was broadcast by 2FC from Petersham Congregational Church, and the concert at night from 2FC's Studio represented one of the finest radio programmes yet arranged. Madame Elsa Stralia sang, and items were also given by Paul Vinogradoff, Wilfred Thomas (basso), Miss Eileen Boyd (soprano) and the Metropolitan Band.

From December 22nd until Christmas Eve the boys' choir at Station 2BL rendered carols during the children's session. A special feature of the season was carols from 2BL Studio until mid-night, followed by dance music and revels at the Ambassadors until 2 a.m. on Christmas morning.

**"HAMLET" BY RADIO.**

**But Not All at Once.**

Mr. Alfred Gordon, the eminent Polish actor who recently produced "Hamlet" at the Sydney Conservatorium, has been very keen to play the great tragedy at a broadcasting studio. Mr. Gordon is confident that it would be practicable to broadcast the play from start to finish, but the management of Station 2FC, with whom he has been discussing this ambitious project, considers that listeners would prefer to hear the drama by instalments. Arrangements have accordingly been made for Mr. Gordon and his company to present excerpts from "Hamlet." They commenced on the evening of Wednesday, December 8th last.

**BOX OF CANDY FOR RADIO SINGER.**

**American Listener Writes.**

"This morning at 3.16 a.m. Pacific time (October 19)," writes a man from San Diego to the Sydney Broadcasting Station 2BL, "I heard a soprano singing 'By the Waters of Minnetonka,' and the volume from the speaker was enough to waken my wife. Please compliment the soprano on her delightful voice, and tell her that I wish there were more with voices like hers on our shore. If she happens to be near the studio about 3 a.m. Pacific time on November 5, I would appreciate greatly if she would repeat 'The Waters of Minnetonka' for my benefit, and a box of candy will be the reward. The name of the singer will have to be furnished to me, as it was lost in the shuffle." The writer is William A. Otto, of San Diego, and it was Miss Gladys Verona who sang. Unluckily, Mr. Otto's letter came too late, for the golden voice soprano (as he called the lady) to sing on November 16, but she sang again from 2BL on Sunday, December 12.

**SANTA CLAUS ON RADIO.**

Santa Claus made a round of visits this year by wireless. Every home in New South Wales which tuned in the radio set to Station 2BL, Sydney, at 6.45 on Christmas Morn, heard the genial old gentleman. He spoke to the children as they examined the contents of their stockings, and told them all about the tremendous distances he has travelled during the night.

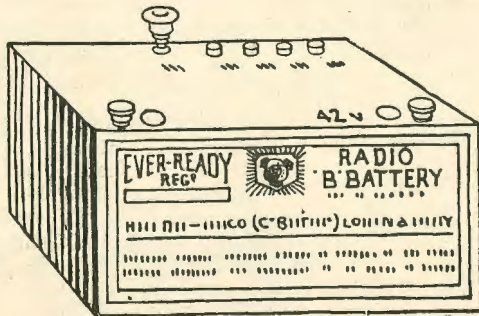
They  
Give  
Long  
Service



**EVER-READY  
BATTERIES**



They are  
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Ever-ready 'Wanda' Plug Radio Batteries The New Radio High Tension "B" Battery, fitted with a Wanda Plug and 2-Screw Terminals. Any size you need, but all of guaranteed good service.

The popularity of Ever-Ready Batteries is due to their dependable qualities. They are always fresh, and give maximum service. They are made in Australia of finest materials. Positive tappings are arranged to suit all required voltages.

**"Ever-Ready" Prices**

- W.P. 40V. . . . . 12/6 X.P. 40V (heavy ser.) 23/-
- W.P. 60V. . . . . 18/9 X.P. 60V. (heavy ser.) 34/6
- SUPER 40V. (Extra Heavy Service) . . . . 30/-

**Sold by all Radio Stores**

Wholesale Distributors—  
**EDISON SWAN ELECTRIC CO. LTD.**  
156 CREEK ST., BRISBANE

**RADIO IN SCHOOLS.  
Minister Encourages Clubs.**

Broadcasting Station 2GB Sydney is interesting itself in the formation of radio clubs in the country. Recently the Department of Education was asked if country schools could be used as gathering places. In reply the Minister for Education (Mr. T. D. Mutch) has written: "No objection will be raised to the formation of clubs in outlying centres, and the use of the school buildings during the evenings for those who desire to listen to broadcast matter."

**ECHO OF WAR.  
A Radio Incident.**

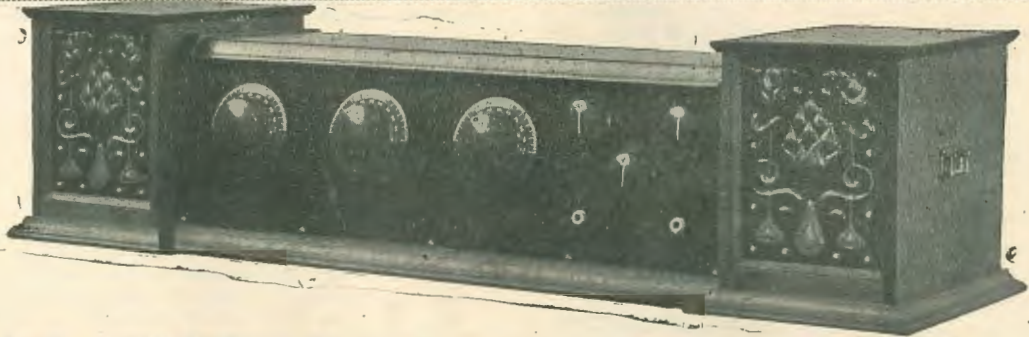
It would appear that men as well as women listen to Matron MacMillan's talks on mothercraft, broadcast from Station 2GB Sydney. One night recently Miss McMillan had just finished her address, when she was called to the telephone, and a man's voice

asked, "Weren't you on the Island of Lemnos during the war?" Miss MacMillan replied that she was. "And you don't remember —, who occupied a tent near yours" Again Miss MacMillan replied in the affirmative, and thus an old war acquaintance was renewed.

**CHRISTMAS EVE BY RADIO.**

Broadcasting Station 2FC arranged a special entertainment for Christmas Eve, entitled "Christmas Eve in London." The thermometer in Australia registered about a hundred degrees on that festive evening, but listeners were asked to imagine themselves among the snow and ice of Old England. This sounded somewhat difficult, but the modern broadcasting studio is replete with all manner of "effects," and listeners were taken for a stroll around London, where they heard the waits, the street noises, the carols, and all the sounds familiar to London residents on the night before Christmas.

**BRITISH AND AUSTRALIAN WIRELESS COMPANY**



**B. & A. W. 5 Valve Neutrodyne**  
*(Illustrated above)*

Gives you REAL selectivity. Cuts out 4QG at one mile, and brings in 2FC, 2BL and 3LO at loud-speaker volume. No wave-trap necessary.

(Under actual test at Glass House Mountain—50 miles from Brisbane—4QG was heard at amazing loud-speaker strength, using no aerial or earth.)

Not only is it a super receiver, but it is a beautiful set. The silky-oak cabinet is beautifully embossed and panelled with a raised dial at each end.

**Price £60**

Complete with all accessories, including 6V. C.A.V. Battery, and own choice loud speaker up to £7, installed free within 20 miles of Brisbane.

**B. & A.W. CRYSTAL SETS WITH AMPLIFIER.**

Will receive 4QG at loud speaker strength within 15 miles, and southern stations at good headphone strength.

**W. B. MARSHALL**  
"Isedale,"  
Carrington Street, Rosalie,

**B. & A.W. VALVE SETS**

1-Valve, from .....	£6
2-Valve, from .....	£13
3-Valve, from .....	£19
4-Valve, from .....	£37/10/
5-Valve, from .....	£50
5-Valve Neutrodyne, from .....	£60

These receivers are designed for selectivity and tonal beauty. Only best quality parts used. They embody new features, new ideas that are making them immensely popular wherever they are installed.

Do not buy inferior receivers when you can secure "B. & A.W." Guaranteed Receivers for the same money.

Inspections Arranged.

**JOHN HICKS & CO. LTD.**  
(Agents for B. and A.W. Receivers),  
George St. (Phone C3705), BRISBANE.

OR

# The A.B.C. of Wireless

## A Simplified Description of Wireless for Beginners

### TRANSFORMERS

We now come to a very important and interesting part of our receiver—the transformer. Simply explained, a transformer consists of two separate coils of insulated wire, placed close to, but well insulated from, each other.

Faraday discovered that if an alternating current of electricity is passed through a coil of wire it sets up an electric "field" in the space immediately surrounding the coil. The term electric "field" is practically illustrated with a quantity of iron filings on a sheet of paper and a magnet held underneath, the filings flying into position, showing the direction taken by the lines of force in this electric "field."

If another coil of insulated wire is placed in this "field," a flow of current takes place in this latter coil—providing, of course, it is part of a circuit. Consequently, electric energy is transformed from the primary or first coil to the secondary coil by means of the electric "field."

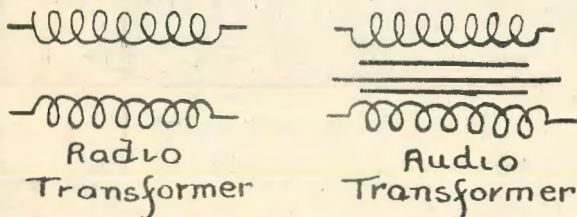


Fig. 1.

Not only is energy transferred, but it is also increased or decreased according to the ratio of the turns of wire in the two coils. For instance, let us take a transformer containing two coils of 100 and 1000 turns respectively—an increase of 10 to 1. Now, if we introduce an alternating current of say, 10 volts and 5 amps. in the circuit of the primary coil (100 turns), we will obtain a registration of 100 volts and .5 amps in the secondary coil (1000 turns).

In actual practice this increase is not so great, owing to losses which occur through resistance and other causes. This type is called a step-up transformer, and it will be seen that the voltage is increased while the amperage is correspondingly decreased.

If there are 1000 turns in the primary and only turns in the secondary, then the voltage is decreased to 1 volt and the amperage increased to 50 amps. This is a step-down transformer.

In the ordinary receiving set we use two classes of transformers—radio and audio—the symbols for which are shown in Fig. 1. The difference between

them is that in audio transformers the coils are wound around an iron core, while in radio transformers no iron core is used—that is, they have an air core. Although a transformer is more efficient with an iron core it is not possible to use this when transferring radio frequency currents.

Some radio transformers are similar in shape to audio transformers, but the most-used design nowadays is simply two coils of wire wound on cardboard formers, one former being of slightly smaller diameter so that it fits neatly inside the larger former. Owing to the very fine gauge of wire used in the coils, and also to the great voltage applied, a transformer is sometimes burnt out, while in other cases the insulation of the wiring fails.

It is suspected that either of these things have happened, a very simple test can be carried out. All that is wanted is a pair of phones and an accumulator. First connect one of the battery terminals to the primary terminal of the transformer, then connect one of the headphone leads to the other battery terminal. Place the phone on the head and tap the other terminal of the primary winding with the free phone tip. If a loud click is heard the primary winding is alright. Now connect the secondary terminals in the same way. If no click is heard then the wiring is broken. If the insulation has failed a click can be obtained when one of the phone tips in connected to the primary and the other tapped on the secondary terminal. If either fault occurs don't try and rectify it—buy another transformer. This last advice is given because an audio transformer generally contains anything up to 12,000 turns of wire, which is about gauge 40.

If any reader should require further information on any of these articles we shall be pleased to answer any enquiry sent to the Editor.

Leighton Gibson

RADIO SPECIALIST

Box 106 B, BRISBANE

Phone J 3167

# RADIO ACCESSORIES

## at **CHANDLER'S**

Whatever you need for wireless you will find at Chandler's. The following are just a few lines from our extensive range of accessories and components.

"Freshman Masterpiece" Kit for constructing a powerful 5-Valve Receiver, £4/12/6.

"Air-Zone" Browning-Drake Kit, £1/5/.

"Radio Rastus," the Novelty Crystal Set, tickles his whiskers, tunes with his tail, £1/5/6.

"Sterling Mellowvox" Loud Speaker, distinctive design, wonderful tone. Price £3/12/6.

### Headphones

Sterling "Lilliput" .....	30/
"Brandes" .....	30/
"Trimmis" .....	22/6
"Rayton" .....	21/
"Spitfire" .....	15/

### Audio Transformers

"Ibig" 5-1 .....	} 18/6
3-1 .....	
"Pival" 5-1 .....	15/6
3-1 .....	15/
"Signal" 5-1 .....	} 21/
3-1 .....	

### Variable Condensers

"H and H" .0005 sq. law .....	22/6
"H and H" st. line .....	22/6
"Advance" .0005 sq. law .....	12/6
"Advance" .0005 st. line .....	10/6
"Emmco" .0005 sq. law vernier .....	21/
"Emmco" .0005 sq. law plain .....	15/
"Emmco" .00025 sq. law plain .....	15/

### "Kleartone Batteries"

45-Volt Horizontal .....	25/
45 Volt vertical .....	25/
22½-Volt Horizontal .....	12/6
Twin Dry Cell for Dull Emitter Valve .....	6/3

### Miscellaneous

"Edison Bell" Series Phone Connectors each .....	1/6
"Edison Bell" Twin Crystal Detector .....	4/6
The All Powerful "Lion Micro" Detector .....	6/6
"Justrite" Soldering Iron Outfit .....	7/6
Battery Cable—5 wires .....	3/
20ft. Loud Speaker Cord .....	3/
"Mars" 50-Strand Aerial Wire, 100ft. coil .....	2/6

### SAME DAY

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**HURRAH FOR THE RAIN!** The glorious and widespread rain of December gives golden promise of a Happy New Year for all. Wireless House Ltd. extend their best wishes to you and yours for 1927, and trust that your fondest hopes will be realised.

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- Amplion A.R.114 75/
- Amplion A.R.19 130/
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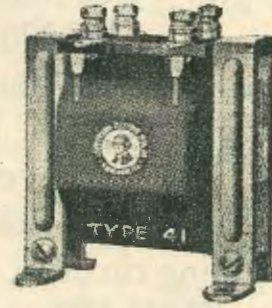
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We wish to convey to our many clients our sincere appreciation for their patronage during 1926, and we anticipate with assurance that the year 1927 will eclipse previous years.



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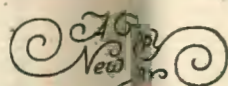
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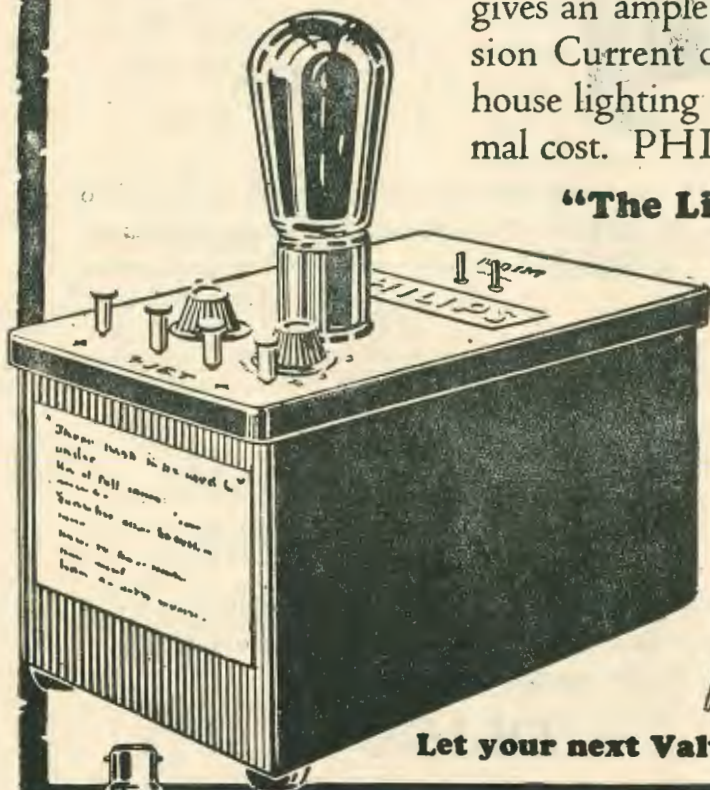
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# PHILIPS

## LAMPS AND RADIO



# Club Activities



## RADIO CLUBS OF QUEENSLAND.

- AUCHENFLOWER AND DISTRICT**—Secretary, L. Cribb, "Frampton," Ridley Street, Auchenflower.
- CAIRNS AND DISTRICT**—Secretary, Mr. Tarbit, c/o Mr. Les Fitzsimmons, Cairns.
- EASTERN SUBURBS**—Secretary, A. E. Newnham, Logan Road, Fiveways, Woolloongabba, Brisbane.
- GRACEVILLE**—Secretary, S. W. Keeping, Ettie Street, Sherwood.
- IPSWICH**—Secretary, S. J. Aspinall, Brisbane Street, Ipswich
- SOUTH BRISBANE**—Secretary, W. R. Gilbert, Gordon Street, Coorparoo.
- TOOMBUL**—Secretary, T. Starkie, Sandgate Road, Nundah.
- TOWNSVILLE**—Secretary, E. Jefferies, Fletcher Street, West End, Townsville.
- WIRELESS INSTITUTE (Queensland Division)**—Secretary, O. R. C. Runge, c/o Finney, Isles, Ltd., Brisbane.
- WOOLOOWIN**—Secretary, H. A. Jiear, Lisson Grove, Woolloowin.
- WYNNUM AND MANLY**—Secretary, P. J. Golden, c/o Trackson Bros. Ltd, Elizabeth Street, Brisbane.

## Woolloowin Radio Club

Oh, well, another year is starting; I wonder what it will bring us in the radio line? If it is as progressive as its predecessor it will be quite O.K. I suppose this time next year most of the transmitters will be crystal controlled, and our worthy Radio Inspector will jump on our tails if we vary our wavelength .00073 per cent.

The past year has seen our old club stronger than ever—our membership increasing and our enthusiasm undiminished (I won't say increasing, because I think it has reached maximum ages ago). We have now, I think, 14 transmitting tickets in the club.

That suggestion of our sec.'s re inter-club lectures has at last borne fruit, and a syllabus for January has been drawn up. Some of the gang from each club lunch together once per week and chew the rag, likewise the pies, if they meet outside a pie-stall. (Hi! Hi!)

The op. of our transmitter (Mr. C. Stephenson) has his own transmitter to watch now. Under the call of 4RG—quite official—he has put up some fine DX working. With an input of 1.4 watts he worked New Zealand a couple of weeks ago. Among others he was QSO station 2YB, the Croydon Radio Club, Sydney. This gang are old friends of ours, you may remember.

The other evening Mr. H. Walsh (4HW—4WR) came down to visit us, or rather, to join us. The goat was, with some difficulty, caught, and he rode it 3-4-5th times around the club-room. This is worthy of note, as it constitutes a record. The previous record was held by Pat. Kelly and 4LJ Feenaghty, who both rode four times around our old club-rooms at Mr. Jiear's. This room was a good deal smaller than our present one. However, Mr. Walsh went away a confirmed 4WN-ite.

We have a scheme afoot, similar to that of our Toombul friends in some respects (remember their hidden transmitter stunt?), but with several other very novel features—more anon.

It is said that some of the gang had a transmitter down the Bay for Xmas. It's a fact, too, because I saw a few of them putting up the aerial, about 1 a.m. emma, "and it was dark and stormy night, etc." It's marvellous what radio will make some people do.

Stop Press!—Mr. L. J. Feenaghty, 4LJ, one of the gang, has just been working two Yank stations. Good work, old man.

## Toombul Radio Club

Another year has passed by and left the world in the more or less happy position of facing this new one. The 1926 ink-slinger of the Toombul crowd is tired, so tired in fact, that he has handed his portfolio (?) to one of the he-hams, who is now endeavouring to make 4TC as well known on paper as it will be on the ether. Just to start the New Year well, our fellow-member, Les., bought a real live motor bike (overhead valves 'n everything), so that now just half a dozen of these contrivances are owned by club members.

The club transmitter is to make a start on 200 metres or so (the B.C.L.'s won't complain of key-clicks then, will they?) with transmission of telephony and slow Morse. All the members are most enthusiastic over this portion of the club's business. A Mullard 0/10 valve is to be used for transmission. The club clown is busy as usual, and he suggested that the op. design a wave-trap for the aerial circuit of the transmitter, so that 4QG's transmission will not interfere with the reception of 4TC. The op. told the clown to buy a good strong rat trap, and donate it for the purpose.

Our noble artist and economist came to a meeting recently with a ream or so of notepaper under his arm, and a pencil over each ear. The figures on the said notepaper proved to be a calculation of the monetary saving he would effect by daily walking to work and back. The club clown rudely suggested that the said artist should lay aside his theoretical calculations and put the question to a practical test. The result is awaited with interest. On January 14th our tame op. will journey to Auchenflower and tell the Auchenflower Club something about the construction of accumulators. This, I believe, will be the third inter-club lecture arranged by the committee appointed to look after such things by club delegates to a meeting at 4WN some time back.

At the meeting on December 14th Mr. Collins was elected chairman, and matters in general were discussed. Another new member joined up, and it was decided to hold another week-end outing early in the New Year. At the conclusion of the meeting our op. showed us his switching arrangements for the transmitters and receivers, and gave us all a practical demonstration of fireworks with his high tension output of 450 volts.

The first meeting of the New Year will be held on Tuesday evening, January 14th, at Mr. Walsh's residence, Eton Street and Sandgate Road, Nundah, at which visitors and intending members are welcome.

(Continued on Page 53.)

# Which Set to Buy and Why!

"Volume — Selectivity — Distance — Clarity"—jump at you from every printed page, but how can you choose from so many?

The thinking buyer will look for the reputation behind the product. Only here can you find your answer, and the assurance that the money you spend in Radio will bring you the satisfaction it should.

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3. Advice given is backed with over ten years' practical experience.
4. Our premises are readily accessible and in a most prominent position in town.
5. Our Mail Order Department has been reorganised, and a same-day service is a feature we are proud of.
6. We can arrange terms to suit your pocket.
7. We have a service man equipped for attendance to your set at all times.

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# The Twin-Eight Circuit

## A Six Valve High Quality Radio Receiver

The twin eight is a new circuit, employing resistance-coupled amplification, which has latterly sprung into popularity in America. We are indebted to Messrs United Distributors, Ltd., for the following constructional details of this receiver.

A closed magnetic field is a very desirable feature in any radio frequency transformer, but it must not be obtained at a sacrifice of efficiency. Interstage coupling has been one of the problems of tuned radio frequency for some time. In the old neutrodyne circuits the transformer coils were tilted at a specific angle in order to keep coupling effects at a minimum. Then designers began to realise that a still better method of eliminating this coupling was to confine the magnetic field of each coil as much as possible.

Binocular coils, "D" coils, toroidal coils, and other numerous types of windings were developed. The chief difficulty has always been the factor of efficiency and the cost of manufacturing.

It would be foolish to aim for perfect tone value in the radio frequency stages, and then lose it in the remainder of the circuit. Therefore, the maximum in by-passing has been employed as well as the use of the resistance coupled amplifier recognised for the best type of audio amplification.

The three stages of this amplifier are enclosed inside of a rectangle of dotted lines. This is to indicate that the unit is one piece of apparatus and not a separate wiring job.

The use of four of the one-halfmicrofarad by-pass condensers eliminates all trace of stray radio frequency currents in the audio stages as well as cutting out those miscellaneous causes of interference which

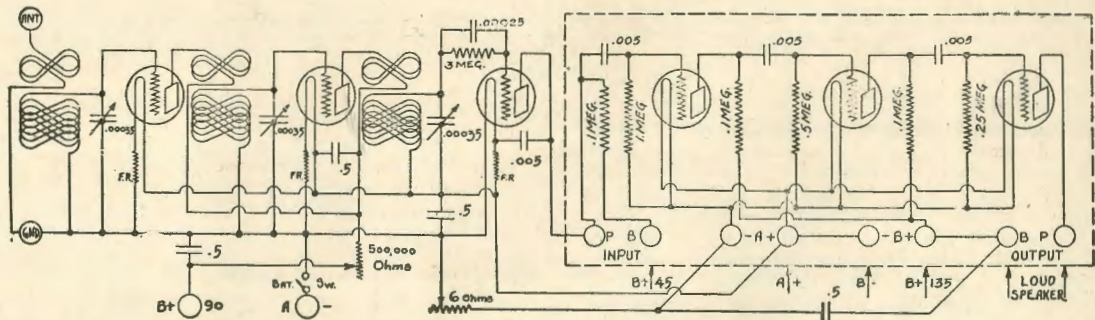


Figure 1.

### Figure-Eight Winding.

The latest development is the figure-eight winding. This type of winding creates a closed field that is very similar to the toroidal type, but it has the advantage of unusual efficiency. The big feature is the high amplification that is obtainable without the sacrifice in selectivity.

This concentration of the fields of the two windings, and the very tight magnetic coupling between them, secures a transfer of energy, and an amplification per stage, much greater than is possible with other limited-field coils. Because of the self-contained field, there is no interference with the fields of adjacent coils and units. This means greater sensitivity and elimination of distortion, which is characteristic of sets troubled with such coupling.

The big feature of the twin-eight circuit then, is a reproduction of the original broadcast voice and music that has those perfect, full, rounded tones which make radio doubly enjoyable in the home.

### The Twin-Eight Circuit.

The circuit diagram of this receiver is shown in Fig. 1. Six valves are employed because of the three stages of resistance coupled audio frequency amplifi-

cation. Highly efficient radio frequency transformers contribute to tube oscillation tendencies, but this is taken care of by means of the 0 to 500,000 ohms variable resistance, of the non-inductive type, which is placed in the "B" battery side of the primaries of the radio frequency coils.

Three high-quality low loss condensers, of the straight-line frequency type are used to tune the three secondary circuits. Vernier dials take care of sensitivity of control in order to pull-in long distance stages.

### No Unnecessary Knobs.

The usual collection of superfluous knobs on the panel has been dispensed with. The first three tubes have fixed rheostats that control the filament current. This means little cartridges that snap into mounting clips and can be altered to suit the particular types of valves that are used in the set. They require no panel control for the inexperienced members of the family to play with.

A six ohm rheostat takes care of the three valves of the resistance coupled amplifier unit. That makes the second knob—the first one is the variable resist-

ance unit that controls the volume. Then there is the little battery switch for turning the set on and off, and that's all that there is on the panel. That's simplicity.

#### List of Parts and Panel Layout.

The simplicity of the panel layout is clearly indicated in the illustration Fig. 2. The average fan no longer likes to see a bunch of knobs and dials that make his scratch his head when he wants to tune in even a local station. The three main dials are necessary in order to guarantee the selectivity, which is essential in pulling in the far stations. One knob controls the quality of the output through

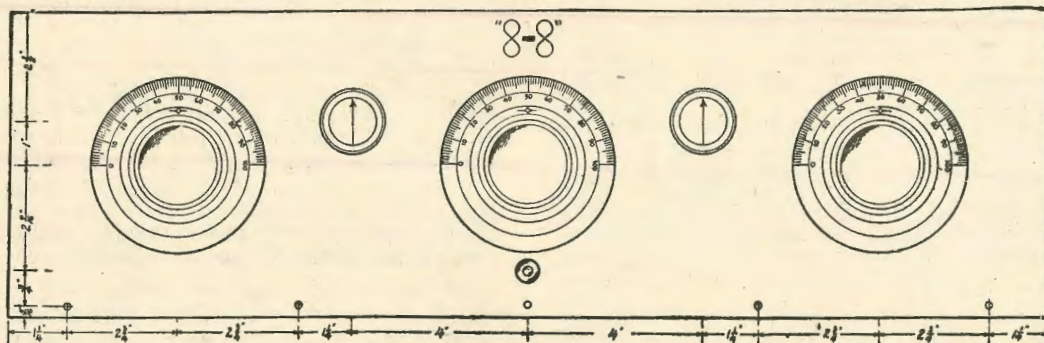


FIGURE 2.

the filament control of the resistance coupled valves, and another knob is the volume and quality control in the plate circuits of the radio frequency stages. The condensers are well spaced, so there is no reason for any capacity coupling between these units. The knob controls are well out of the way of the vernier dials, permitting complete freedom of tuning. The panel layout shows the dimensions of the centre lines of each piece of apparatus. Of course, this layout is dependent on the selection of apparatus as specified. Any alterations would necessitate a change in the layout of both the panel and baseboard.

#### The List of Parts Required.

- 1 Baseboard  $\frac{3}{8}$  x 8 x 23 inches.
- 1 Panel 3-16ths x 7 x 24 inches.
- 3 Bodine twin-eight R.F. transformers (matched).
- 3 Pilot S.L.F. condensers, type SLF-17 .00035 mfd.
- 3 Aristocrat E.Z. Toon dials, type 775.
- 1 Muter amplifier—resistance coupling—type 1400.
- 1 Centralab rheostat—6 ohms.
- 3 Pilot sockets.
- 1 Centralab 500,000 ohm radiohm.
- 1 Muter battery switch, type 1600.
- 3 Muter fixed rheostats, type 1700.
- 4 Tobe Deutschman by-pass condensers.
- 1 Muter fixed condenser, type 635.
- 1 Muter grid condenser, type 606.
- 1 Muter gridleak, type 730.
- 1 Binding post strip, 3-16ths x 1 x 5 $\frac{1}{2}$  inches.
- 4 Binding posts, Eby Ensign.
- 15 Lengths Acme celatsite wire No. 14 (black, red, green, yellow, brown).
- 1 Cabinet to suit.
- Miscellaneous screws, lugs, solder, etc.

#### Colour Wiring.

The use of a colour scheme in wiring is based on some definite plan that is to be followed:—In wiring the set this schedule is recommended for use:

- On all negative "A" leads use black celatsite.
- On all positive "A" leads use red celatsite.
- On all grid leads use green celatsite.
- On all positive "B" amplifier leads use brown celatsite.
- On all positive "B" detector leads use yellow celatsite.

The function and potential of each lead can then be determined at a glance. It helps to eliminate the possibility of wrong connections, and makes it easier to separate those leads which are most susceptible to coupling and creation of interference. The stiff celatsite wire also makes it a simple matter to construct an attractively-wired receiver.

#### The Baseboard Assembly and Wiring.

The first step in the assembly of a receiving set is the layout of all holes for mounting the apparatus on the panel. This layout can be made up from Fig. 2,

After the holes have been drilled, assemble the apparatus on the panel. Then fasten the front panel to the baseboard by means of the five screws. This will show the available room with the projection of the variable condensers across the baseboard. Arrange the various pieces of apparatus on the baseboard to correspond to the layout, Fig. 3. The twin-eight coils are placed at an angle of 45 degrees. The valve sockets should be placed with the terminals in the positions shown. This, of course, makes the plate and grid leads to the radio frequency transformers very short, and permits short connections in the grid circuits to the variable condensers.

The first two fixed rheostats should be set at the angle shown, with the one terminal lapping over the negative filament terminals on the first two sockets. The fixed rheostat for the detector valve is placed a short distance away, but this is immaterial. The grid condenser and leak is placed close to the grid terminals of both the socket and twin-eight coil.

**The Resistance Coupled Amplifier.**

This unit is placed in the corner of the baseboard as shown. The binding posts should face toward the rear. The heads of the binding posts A—and input P, should be removed. Terminal lugs should be added to the following posts for wiring connections:—Output P, A battery plus, A battery minus, and input P. All the binding posts on the unit with the exception of input P and A battery minus, are used for making the regular connections, hence the reason for removing the heads from the two exceptions. If desired, the lugs can be added on the lower side, but care should be taken so they do not come in contact with some other part of the wiring of the unit.

Connections to the sockets can be soldered to the projecting terminals, or looped under the screws. The projecting terminals on the detector socket should be cut off and connections made to the screw contact. On the twin-eight coils the terminals are two on top, G and F, and directly below them are the P and B lugs. The last two are marked for identification in the diagram.

**Battery Connections.**

The A minus terminal is on the binding post strip, but the A plus connection is made to the post on the muter amplifier unit. The B minus terminal is on the unit also. The detector plate voltage is 45, and

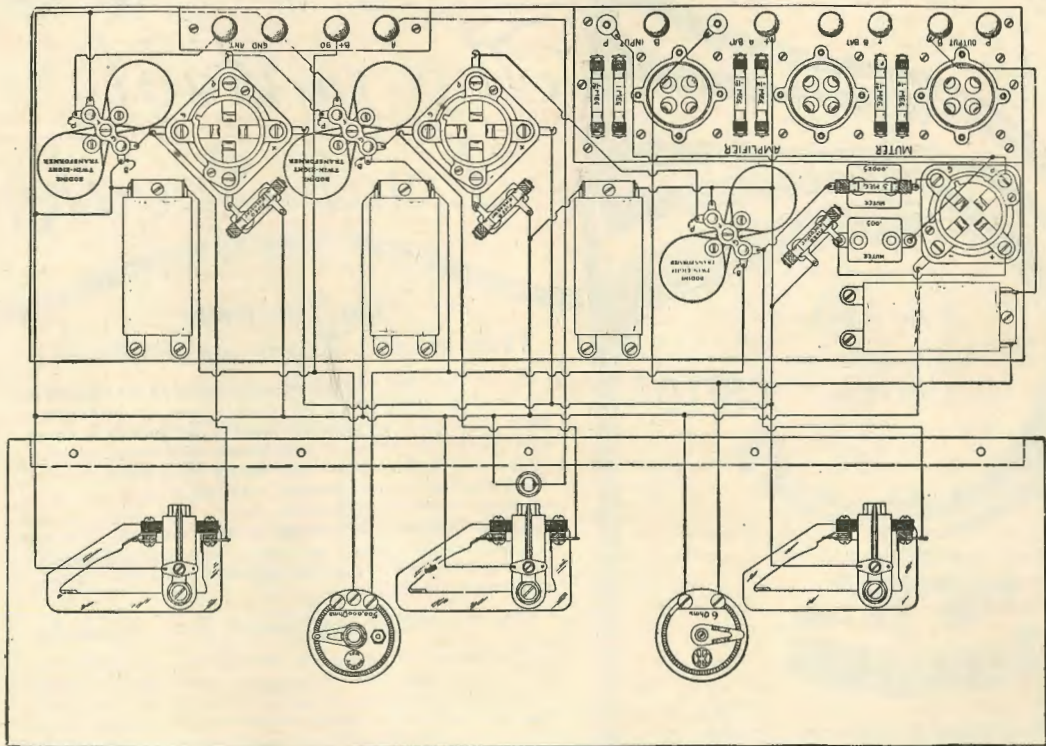


FIGURE 3.

For A minus, B plus 90, aerial and ground connections, the small extra binding post strip is added. This should be mounted with spacers, raising it about two inches above the baseboard. The four by-pass condensers are mounted along the inner edge of the baseboard, coming partly under the variable condenser. There is ample room underneath, and as the terminal ends project, there will be no difficulty in wiring.

**Wiring.**

In wiring, follow the colour schedule as previously described. Make the leads as short as possible, and avoid running too close to the coils. In the picture diagram no connection is shown to the third terminal of the Royalty resistance. This is as it should be, so don't have any misapprehension. The pilot variable condensers have two terminal lugs to the fixed plates, but either one can be used for the connection.

the positive connection should be made to the post on the unit marked B input.

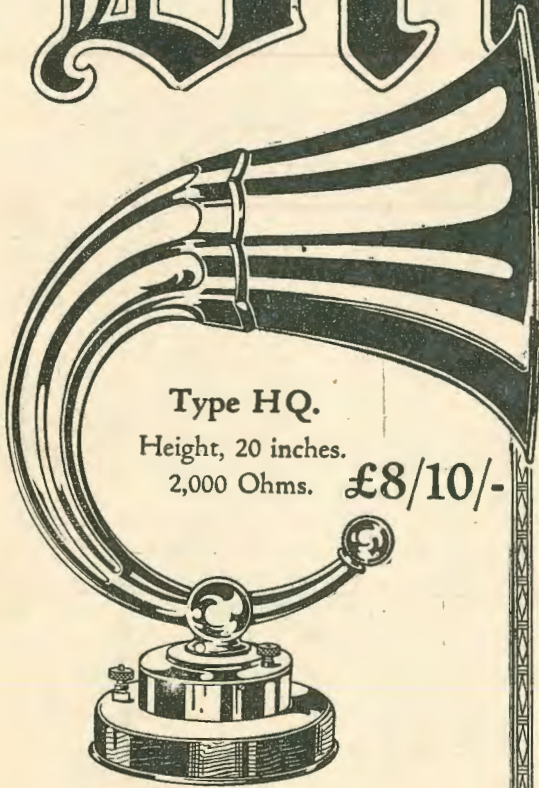
The radio frequency plate voltage should be 90 and connected to the B plus 90 binding post on the special strip. The resistance coupled stages require 135 volts with the connection to the plus B battery post on the unit. The loud speaker is permanently connected to the two output posts on the unit, the P and B indicating which is the plate side and which the battery side.

**Tuning.**

In tuning the set the same rules apply as in any tuned radio frequency amplifier. The dials with the exception of a possible slight variation in the first will tune to approximately the same points for each station. The rheostat setting is not critical, and neither is the volume control. Don't try to force the volume—work for quality.

# Brown

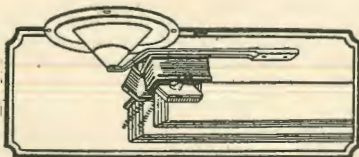
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This handsome new Loud Speaker possesses the same beauty of outline as the luxurious Q Type, whilst retaining the full volume and sensitiveness of the well-known H1.

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## Do You Know

### How Sound Waves are Produced?

Sounds from the Gramophone are produced by the point of the needle riding in the groove of the record transmitting the vibrations, which are set up to the mica diaphragm of the sound box. As the mica diaphragm vibrates, so it produces sound waves, which are conducted through a tapered horn, thereby being greatly amplified. This mica diaphragm is connected to the stylus bar—at the end of which is the needle—at its exact centre. Thus, when the mica diaphragm vibrates, it does so from its centre outwards. If it were coupled in two places, or if two needles were used simultaneously, its flat surface would be distorted and would be unable to reproduce sound waves true to life.

### The Gramophone Sound Box Principle.

This "centre pull" principle is incorporated in the Brown Loud Speaker—and used in this form appears in no other Loud Speaker in the world—the reproducer consists of a cone-shaped aluminium diaphragm anchored at its exact centre to the end of a vibratory reed. This reed is attracted and made to vibrate over a wide range of harmonics (from 100 per second to 3000 per second in ordinary speech) by the current which passes through the coils on the end of the magnet above it.

The Brown Loud Speaker has acquired an exceptional reputation on account of the purity of its tone and its remarkable volume. The tuned-reed method of construction permits a much more faithful rendering of both the high and the low notes, with an entire absence of the distortions often attributed to Loud Speakers.

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# Notes from 4QG

## Items Past and Present

The descriptions of the motor cycling races which are relayed from Station 4QG continue to please listeners in all parts of Australia. The Postmaster-General's Department has allotted two very fine lines to the station for those relays, and the Speedway races reach listeners with the utmost clarity.

From town and country, and from land and sea, come reports of wonderful reception of 4QG, but perhaps the best for some time came a day or two ago from the wireless officer on one of the mail boats running between Sydney and Frisco.

It was about 3 o'clock one morning (corresponding with 9 o'clock p.m. Brisbane time), when the ship arrived in San Francisco Harbour, and all passengers and crew were assembled for medical inspection.

While the ship crept slowly up the harbour and awaited the launch carrying the medical officer to come alongside, the passengers were entertained by a programme broadcast by 4QG, away the other side of the blue Pacific. The wireless officer reports that the Brisbane station was sufficiently strong to work a loud speaker all over the ship's deck, and that the quality was perfect.

Each mail arriving from America now brings batches of letters to 4QG from listeners who report excellent reception of the programmes. Now that winter has set in across in Canada, reception seems to have improved considerably and dozens and dozens of radio enthusiasts seem to have no trouble whatever in tuning in 4QG.

A very interesting description of the departure of the Commonwealth Liner, "Moreton Bay" was broadcast from the New Farm Wharf recently by 4QG Brisbane. About a hour before the ship sailed a microphone was taken down the engine room, and connected by long leads to portable transmitting apparatus on the wharf. The announcer who undertook the description from the engine enjoyed, it is said, everything but the heat, the thermometer registering on the vicinity of 120 degrees at the time.

Following the talk from down below, the microphone was transferred to the bridge, and all the telegraphs and other instruments were described. Realism was introduced to this part of the transmission by the testing of all the telegraphs, the sounds of which were picked up by the microphone and broadcast.

Perhaps the most enjoyable part of the transmission was the description given from the wharf as

the "Moreton Bay" moved out. The buzz of conversation of the big crowd gathered on the wharf kept the microphone busily pulsating, and the description of the actual departure—the goodbyes—the fluttering of hundreds of coloured streamers—gave listeners a mental picture of the scene.

Everyone who instals a wireless receiver has (or should have) a lightning arrester affixed to the wall where the aerial enters the house. During an electrical storm a little click may often be heard at the arrester. The aerial becomes charged electrically and when the charge becomes sufficiently great it discharges to "earth" at the arrester causing the click.

In a big Station like 4QG with an extensive aerial system a very large charge collects, and this builds up and up until it is many times greater than the charge in a small receiving aerial. Eventually it becomes so great that it breaks across the huge arrester with a report which echoes through the whole of 4QG and even an experienced engineer is likely to "jump" when the first discharge takes place.

Occasionally the aerial collects charges more quickly than they can leak away, and it is then that it becomes necessary to close down and permanently "earth" the aerial until the storm is past.

If lightning is very vivid, and 4QG suddenly ceases to be, listeners may take it for granted that the discharges in the station are so severe that an immediate stoppage has been necessary.

This occurred on a recent Tuesday night, when "Uncle Ben" was talking to the children. The electric discharge was so heavy that it was found necessary to close down the station until the storm passed over.

The appearance of a tribe of real Red Indians from the Wintergarden Theatre at the studio of 4QG recently, gave listeners what may be their last opportunity of hearing the spoken language of the vanishing race.

They visited the studio in all the grandeur of their featured headwear and characteristic multi-coloured dress, and spoke to listeners in both English and native tongues.

It is said that the old chief, who is over 80 years of age, is pining to return home, and although he has made more money than he will ever need in the world tour of the "Vanishing Race" film, he counts it as nothing compared to the beauty of his home, his land and his people.



A few years ago the telephone was looked upon as a luxury, but to-day it is in the majority of homes.

Soon a wireless receiving set will be as popular, if not more so, than the telephone. The number of aeriels now springing up resemble mushrooms in that they appear so quickly.

Passing along the railway line between Brisbane and Townsville it is a common thing to see an aerial running from a tree to a lengthman's camp, and no doubt many long evenings under canvas are brightened by programmes from broadcasting stations.

The sea has its listeners also, as is demonstrated on the "Wollongbar," a trader between Byron Bay and Sydney. Her purser, a wireless enthusiast, has his set installed in the music room, and one of 4QG's staff with many others at dinner the other evening rolling in a dirty sea, and were entertained by the bedtime story tellers at 4QG.

Another ship with an enthusiast is the "Canberra," whose chief engineer has a fine set with which he entertains his confreres.

It is somewhat in the nature of a relief to turn from present-day songs to those of a past generation, and in doing so renew acquaintanceship with gems which were household favourites a decade or so ago. Some of the older songs have passed into oblivion quite unlamented, but such a song as Molloy's "Love's Old Sweet Song" is still worthy of rendition, and listeners to Station 4QG had the added pleasure of hearing it in quartette form by the Anglo Male Quartette, on December 20th last.

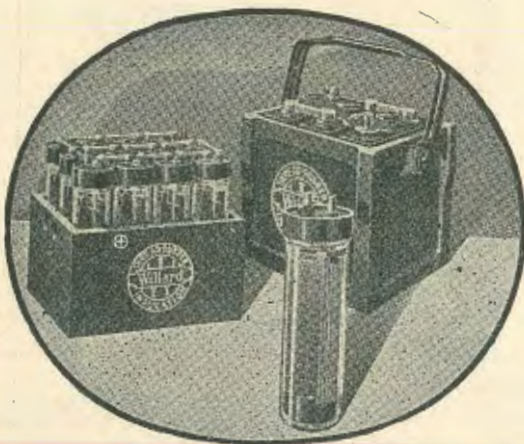
It is quite commonplace to ascribe to Scotsmen a deficiency in the sense of humour. Whether or not that is a true conception of national characteristics of the "Scots," it is to Scottish humorous songs that a great number of comedians turn for their programme item.

Some very interesting "stunt" transmissions are included in 4QG's future programmes. Already a diving broadcast has been effected from the bottom of Moreton Bay, and a description of the departure of one of the Commonwealth Line of steamers has been relayed from the wharf. In the very near future a microphone will be installed in the Fire Brigade Headquarters in Brisbane, and the Chief Officer has promised a full turn out of his men for the broadcasting of a fire alarm. Those and other interesting feature relays will interest listeners shortly.

Owing to the great distance between the choir, altar and pulpit at St. Stephen's Cathedral, 4QG installed a microphone at each of the three points, and by means of switches centrally controlled, the different microphones were switched in or out as desired.

The big disadvantage with the arrangement was that a loud "click" was heard at each change. Further efforts were extended, and this difficulty has now been overcome. A new system of control has been installed, and the last transmission from St. Stephen's Cathedral was the best ever broadcast from there, and was perhaps the best ever attempted by any station from a church of such a "scattered" nature.

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# Imperial Wireless Communication

## Official Test Passed by Beam Stations

The Marconi Company has received from the Engineer-in-Chief of the Post Office the official certificate that the wireless stations constructed at Bodmin and Bridgwater, for communication with Canada on the Marconi short wave beam principle, have passed their official seven days' test, and the General Post Office announced that a high-speed wireless telegraph service between Great Britain and Canada through these stations was opened on Monday, October 25th last. With the first Dominion beam service thus established Great Britain's world leadership in wireless communication is maintained.

As the home of Senatore Marconi's first long-distance wireless experiments, Great Britain was the pioneer country in commercial wireless telegraphy. And now, with the modern high-power valve transmitting station at Rugby for all-round communication, and the Marconi beam stations for direct communication between the Mother Country and each of the Dominions, it possesses the most complete, up-to-date and efficient wireless service of any country in the world.

### A FAR REACHING REVERSAL OF POLICY.

It was in 1923, after several years of discussion, that the Government definitely decided to proceed with the erection of wireless stations to communicate with each of the Dominions. The Dominions had been pressing for such a service for some years, and when the British Government's decision was taken they immediately put arrangements in hand for the erection of corresponding stations to form a complete Empire wireless service. While negotiations were proceeding with the Marconi Company for the erection of high-power long-wave valve transmitting stations to carry out those services, Senatore Marconi became convinced, as the result of his experiments, that a new system of wireless telegraphy could be developed that would enable these Imperial services to be carried out much more efficiently and at much lower cost than was contemplated by the high-power long-wave wireless stations. His plan was to use short wireless waves—of 100 metres or less—which, contrary to the generally accepted theory at that time, he had proved to be quite reliable for communicating over great distances; and to increase the strength of signals and the speed and efficiency of working by employing reflectors to concentrate into a narrow beam the wireless energy at the transmitting station, and to reflect a greater amount of energy on to the receiving aerial. As Senatore Marconi has said, a considerable amount of courage was necessary to propose such a revolutionary change. He had no uncertainty, however, neither had the company of which he is the chairman; and the proposal was put before the Government. So convincing were the arguments in favour of the new system that the whole technical policy of Imperial wireless communication was revised, and the Government entered into a contract with Marconi's Wireless Telegraph Company Ltd., to build short-wave beam wireless stations in England to communicate with Canada, South Africa, Australia,

and India. The Governments and wireless companies in each of these Dominions were equally impressed with the value of the beam system, and contracted with the Marconi Co., to build corresponding stations to communicate with those being erected in England.

The building of the stations was started in April, 1925. They have been longer under construction than was at first anticipated, but this has been due to the fact that research work has been carried on simultaneously with constructional work, and many valuable improvements on the original designs have been made as the work progressed. Power valves have had to be specially designed to deal with the extra high frequencies of short-wave working, and the Marconi oil-cooled valves at the transmitting station are the most efficient of their kind in the world.

### EXTRAORDINARY SPEED OF SIGNALLING.

The official Post Office tests laid down that the stations for the Canadian service should be capable of communication at a speed of 500 letters per minute each way (exclusive of any repetitions necessary to ensure accuracy) during a daily average of 18 hours, and that a demonstration fulfilling this condition should be given by actual working for seven consecutive days. This test took place between October 7th and October 14th, and the guarantees—which were regarded by everyone as being extremely stringent—have been fulfilled. During these and the preliminary tests carried out by the Marconi Company speeds of 1250 letters per minute in each direction, equal to 2500 letters per minute over the complete circuit, have been worked for many hours on end.

Counting every hour of the seven days' test the average speed of signalling has been about 600 letters per minute in each direction, or 1200 letters per minute for the complete circuit.

This result abundantly justifies the claims made for the beam system, and indicates that the stations will be capable of handling all the traffic that is likely to be available between England and Canada for some years to come.

Wireless telegraph engineers are used to high signalling speeds, but the extraordinary achievements of the beam system have been the cause of several surprising and amusing incidents, due to the speed of working during the recent tests. On more than one occasion the engineer has put a message on the Canadian circuit, and before he could reach the recording room in the same building he was handed the reply from Canada.

### ADVANTAGES TO COMMERCE.

The institution of direct Marconi wireless telegraph services between London and Paris and other Continental centres has shown that new telegraph traffic is created by the provision of new and rapid means of communication. It can, therefore, be confidently anticipated that the establishment of the beam services, which can be worked at a speed which



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will enable large volumes of traffic to be dealt with in the shortest possible time, will create new business that has not previously been possible, and so bestow a great benefit on the commerce of Great Britain and Canada.

In this connection it is interesting to note that Canada has shared with Great Britain the pioneer position in commercial wireless communication since Senatore Marconi's earliest long-distance experiments in December, 1901—of which the 25th anniversary was celebrated recently; and the establishment of the first trans-Atlantic commercial wireless service between Clifden, Ireland, and Glace Bay, Canada, in 1907. By being the first Dominion to open a beam service, it continues to take a lead in the development of this means of communication.

The beam transmitting station in Canada is situated at Drummondville, 30 miles east of Montreal, and the receiving station at Yamachiche, 25 miles north of Drummondville. These stations are linked up by land line to the central office of the Canadian Marconi Company in Montreal in the same way that the English stations are linked to the General Post Office. Beam stations are also being erected in Canada for direct communication with Australia, and corresponding beam stations are being built at Melbourne.

The sites occupied by the beam stations at Bodmin and Bridgwater for communication with Canada are also utilised for the stations to be used for communication with South Africa. These South African stations are practically complete. Similar stations are being built at Tetney near Grimsby, and at Winthorpe, near Skegness, for communication with Australia and India—the Grimsby stations being transmitting stations and the Skegness stations receiving stations. Corresponding stations are being built in the Dominions near Capetown, Melbourne, and Bombay. All these stations are in an advanced state of construction, and are expected to be opened within the next few months. This will complete the present Imperial scheme; but outside this scheme the Marconi Company is already engaged on a considerable development of commercial telegraph services on the beam principle. The company holds a license from the Post Office to conduct wireless telegraph services with certain Continental countries, and with all other foreign countries outside Europe. In addition to the wireless stations it has been operating on these services for some years, it has a beam station nearly completed at Dorchester for communication with North and South America. A corresponding station is also in process of erection at Rio de Janeiro.

Another important development in which beam stations are included, and are already under construction, is the Portuguese scheme for linking up Portugal and its colonies. Some time ago the Marconi Company obtained a concession from the Portuguese Government for the establishment of wireless telegraph stations in Portugal and its colonies for the purpose of linking them together and establishing wireless communication with other parts of the world. These stations are now being built at Lisbon, in the Cape Verde Islands, the Azores, and in East and West Africa. When they are completed wireless services will be established with England and the principal Continental countries and with South America. The Marconi short-wave beam stations in this scheme are being erected at Lisbon, Loanda, and Mozambique.

### ADVANTAGES OF THE BEAM SYSTEM.

It is claimed that a beam wireless station has the following distinct advantages over any other form of telegraph communications for point to point communication over similar distances—the capital expenditure involved is considerably less; it is more economical to run and maintain; and it is by far the most speedy method of communication yet devised. The speed of working of the beam system is at present limited only by the mechanical limitations of the transmitting and recording instruments, and when suitable means of recording over landlines at higher speeds than at present obtainable have been developed it will be possible to increased correspondingly the overall speed of signalling.

The results of tests between England and Canada have shown that the use of beam aerials at both transmitting and receiving stations has resulted in a strength of signal some 100 times that obtainable with non-directional transmitting and receiving aerials at each end, and utilising the same power; and it has enabled the service to be carried on under conditions when signals obtained by utilising non-directional aerials were hardly appreciable. At the same time the use of beam aerials has resulted in a very large degree of freedom from atmospheric disturbance.

### DESCRIPTION OF THE STATIONS.

The Bodmin station which is built upon a strip of land bordering the main Bodmin-Truro road,  $4\frac{1}{2}$  miles south-west of the Cornish county town, comprises two transmitting systems, one for communication with Canada, and the other for communication with South Africa. The receiving stations are situated near North Potherton,  $2\frac{1}{2}$  miles south of Bridgwater, off the main Bridgwater-Tounton road.

The masts and aerial system—the design of which is peculiar to the short wave beam system, and is entirely different from the design previously used in commercial wireless stations—are similar at both stations. There are five lattice steel masts for each service erected in a straight line and aligned so that the great circle bearing on the distant station is at right angles to the line of masts. The beam is, therefore, projected accurately in the direction of the stations with which communication is being maintained. The masts are 277 feet high with cross arms at the top measuring 90ft. from end to end, and giving an additional 10ft. to the height of the mast. The aerial and reflector systems consist of a number of vertical wires, forming as it were a wire curtain, suspended from steel cables attached to the cross arms and running along each side of the row of masts. The aerial system is on one side of the masts, facing the distant station, and the reflector system is on the opposite side.

The transmitted, which is rated at only 20 kilowatts, is of an entirely new design throughout, and is extremely compact. Stability of wave-length, which is of the greatest importance in short-wave work is obtained by exceptional care in the design of the set.

The transmitter is operated direct from the Central Radio Office at the General Post Office, London. The land line is led in to a relay attached to the first panel of the set. By this means the operator in London is in full control of the transmitter, and at the

moment he presses his key or feeds his signalling tape into a high-speed telegraph instrument, the signals he is sending are being recorded in the telegraph office in Montreal, which is connected in a similar manner to the Canadian wireless receiving station.

In the same way the messages put on to the transmitter in the telegraph office at Montreal are instantly recorded at the General Post Office in London, after having traversed the Atlantic and passed through the beam receiving station at Bridgewater.

Now that the Canadian station has been completed satisfactorily, the preliminary tests will at once be proceeded with in the case of communication between England and South Africa. On the completion of these tests, those with Australia and India will follow, the construction of beam stations for all these services being nearly completed.

## Morse Signals Spoil Programmes on the Coast

The oscillating valve nuisance is not the only form of trouble experienced by listeners. (In country districts where receivers are few and separated fairly widely this trouble is not experienced at all.) In towns and cities near the coast—and particularly where coast wireless stations are situated—listeners

who cannot read morse signals by sound have to listen to telegraph signalling to the detriment of their attempts to receive the broadcasting programme uninterruptedly. If they can read morse telegraph signals fairly rapidly, then there is an added form of entertainment for them. The signalling is conducted between ships and their stations ashore—wireless messages from passengers are sent out as in the case of land-line telegraphy.

The transmitting equipments on the ships—and frequently on the coast stations also—are of an obsolete type called the spark system. This system was the earliest form of wireless, and cannot be operated without sending out interfering waves a long way off the proper wave-length that should be employed. The wave-length set aside for that class of communication is 600 metres, but owing to the old-fashioned equipment in use, an ordinary receiver will pick up the ships' signals anywhere between 400 and 700 metres. Thus broadcast listeners in or near coastal towns where communication is maintained with ships, experience considerable difficulty in picking up the broadcast station without suffering the interference caused by the morse signals.

There are several other forms of interference, that is, transmissions or signal noises that cannot be tuned out, or are difficult to tune out. We will consider these in a latter note.

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In a review of last year's ham activities, although revealing nothing startling, show an expansion of former years' achievements, and the raising of the amateur status to a considerably higher standard. We are now on the threshold of a new year and look forward with interest and wonder, for there is more to be done, Yea, Oh illustrious OM's! More to do! At any rate, if this year be not the red-letter year of amateur radio I shall, on the spot, resign my job as a prophet.

Owing to the general exodus to the seaside and other like haunts of each individual radio ham, there was no great deal of action during the last month

4LJ with his newly installed UX210 tube has succeeded in pushing his signals into the land of the Yank. F.B. OM! He has put in a rectifier since I heard from him last, and has a very pretty R.A.C. note, which sounds the goods for DX.

4RG, a new one with a snappy "fist," has opened up on 80 metres, and has been doing a lot of really creditable low power work, on one occasion being QSO New Zealand, with only 90 volts on the plate of a UX tube. He expects to have a "7½ watter" working on 30 metres shortly. Good luck OM!

4BD continues to add more countries to his already large DX list. He has been QSO Italian 1GW, whom he worked the "long way round." Also heard him chewing the rag with Y-ICD Montevideo, Uruguay the other night.

4RB says he's tried every type of Hertz aerial in "QST." He likes the Zeppelin type best, as it is the easiest to get perking properly, and the double line feeder seems less likely to radiate to any appreciable extent as other types of voltage feed systems are apt to do. He is now using two UX210's in parallel, but with raw AC on their plates, The combination seems a good one, as he can hook a Yank at any time of the night with every CQ call.

4MM is working hard to evolve a synchronous motor that will turn over at 3600 revs., and wont shirk at turning a "sink" rectifier commutator. He says he's fed up with slop rectifiers.

4CG is the most consistent local on the air at present. He can be heard working the cream of the DX every every night.

4CM "heaves to" now and again. He is putting in another H.T. alternator, a 900 cycle job this time. We will hear something like a piping note then.

4DO passed through town the other day bound for Sydney. He didn't have much time to himself then, but expects to see a few more of the gang on his return early this month. He intends sitting for a commercial "ticket" during his stay in VIS. Best of luck Hal, OM!

Nothing new has been heard in regard to the Number 3 W.I.A. traffic test. Arrangements, however, have been made to include New Zealand stations in this test, so in all probability, it will not commence until about the middle of this month.

NKF, the U.S. naval laboratories short-wave station, has been heard making a few fone tests lately. Their new crystal controlled outfit puts out some very f.b. sigs., and oh Boy! what a note!

Jap—ITS has also been making a bit of noise on fone. He is using a fifty watter with absorption modulation, but says he intends giving the Heising system a try shortly. He puts over some very good "canned" music (not Japanese "melodies"), and has an excellent range of Beethoven's sonatas, etc.

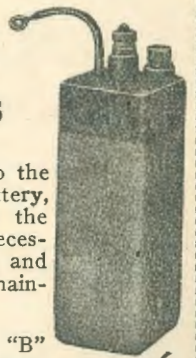
### DEGREES BY RADIO.

Paris will soon boast of a Wireless University. The University Council has sanctioned the foundation of a wireless telephony school, which will broadcast special lectures by eminent professors for the benefit of those taking the standard University courses. It is even possible that those who take this course of lectures will be allowed to take a special examination and gain their certificates in the usual way.

### A RADIO JOKE.

It's all right to have a loud speaker in the house if you are not married to it.—Cincinnati Enquirer.

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## ARTICLE IV.

*Continuing instruction on the International Abbreviations*

### Radiotelegrams.

We are now ready to consider the actual radiotelegram and its form.

A radiotelegram (or radiogram) consists, so far as a transmitting station is concerned, of four parts—the preamble, the address, the text, and the ending. We shall consider all four in this order.

### The Preamble.

(a) As already stated, the preamble of a radiotelegram contains all the instructions as to transmission. In point of fact the preamble contains eight definite parts transmitted in a fixed order. Students should learn the order of transmission with care.

First of all, and immediately after the preliminary call (—.—.—) comes the service prefix. The prefix denotes the class of radiotelegram and acts as an instruction to both the transmitting and the receiving station. The prefixes are only five in number:—"A" for a service message (i.e., one dealing with the conduct or maintenance of the radiotelegraphic service). "ST" for a paid service message; "S" for a Government radiotelegram; "D" for an urgent radiotelegram; and "PRESE" for a press message. Ordinary messages have, of course, no prefix.

(b) Immediately after the prefix comes the word "RADIO," transmitted, of course at full length.

(c) Next comes the name in full of the station of origin (either a ship or a coast station). Note that the full name is spelt and not merely the call sign given (e.g. **CANBERRA**—not **VHO**).

(d) Fourthly comes the number of the message, and we shall have a word about numbering. Australian coast stations use a daily system of numbers—the "day" being 24 hours starting at midnight. During each "day" all messages for any one particular ship are numbered consecutively from 1 onwards, due attention being given to questions of priority of messages as considered earlier. Special groups are not made for the various classes of messages, but all classes are numbered in the one sequence. After the ensuing midnight a fresh start is made. Each station to which transmission is made is, of course, given its own series of numbers, renewed daily, and in every case commencing at No. 1. Similarly, British and Australian ships number their messages according to this plan. On the other hand, however, many foreign ships number their traffic, not by day, but by voyage. Thus the first message transmitted after the commencement of a voyage would be No. 1, and at the end of the voyage (round trip) the numbers might be up in the thousands.

(e) After the number of the radiotelegram comes a figure denoting the number of words in the message, and next comes .

(f) The date of handing in, and

(g) The time of handing in.

A note may be made here about the method used in transmitting the time mentioned in (g). Time is transmitted in two groups of figures, to indicate hour and minute, followed by the suffix "M" for a.m. or "S" for p.m. The indicators stand respectively for "matin" and "soir"—"morning" and "evening." Thus 9.15 a.m. would be rendered by "9.15M" and so on.

(h) The last item comprised in the preamble is the route instructions (if any), indicating the special route the message is to take, or the service instructions put in by the receiving station (e.g. such indicators as "Reception Doubtful" etc.).

### The Address.

Immediately after the preamble, and prior to the address proper comes the break sign (—...—). Next in order come any special instructions given by the sender. Such instructions may, for example, be, "Reply Prepaid" (for which the indicator **RP** is inserted with a figure representing the amount paid for the reply, or "POSTE" for a radiotelegram intended for postal delivery from a ship's subsequent port of call. However, it is sufficient that the student for the Amateur Operators' Proficiency Certificate should know that such (and other) instructions are inserted in a radiotelegram without concerning himself with learning the full list.

The address proper presents no difficulties. It should, of course, give all the information necessary for the safe delivery of the radiotelegram. Such an address as

WILLIAM LONSDALE,  
Passenger Canberra,  
BRISBANE RADIO

is sufficient for all ordinary purposes. It should be noted that names of towns, countries, etc., consisting of more than one word are charged as one word in the address, but in the text of a radiotelegram count as separately chargeable words.

### The Text.

Between the address and the text of a message the break sign (—...—) is again inserted. Nothing very much need be said under this heading. Brevity consistent with clarity is, of course, the end desired. In plain language all words up to a maximum of 15 letters count as one word. Words of greater length count as one word for every 15 letters.



charged to the originator of the message than should have been, the mistake is signalled as a fraction. The numerator shows the number of words for which payment has been made, while the denominator represents the actual number of words chargeable. For example, if a radiotelegram of 50 actual words has been paid for as 51 words, the signal indicating the mistake would read: 51 —.—. 50.

**Length of Transmission.**

The length of time occupied in continuous commercial transmission must not exceed 15 minutes. At the end of every 15 minutes a break must be made for three minutes, to be occupied in listening in for any other station that may have traffic for either of the two stations concerned. This regulation applies, of course, with equal force to amateur as well as to commercial signalling, with the important difference that amateurs must stop for three minutes after every ten minutes continuous signalling.

**Long Radiotelegrams.**

During the transmission of long radiotelegrams such as press messages exceeding 40 words in length, a break is made by the transmitting station after each 20 words by means of the inquiry call (..—.). The receiving station, if reception has been correct, repeats to the sending station the last word received, followed by the "Go ahead" signal (—.—). The remarks given above relative to the 15 minutes' work, 3 minutes' silence, also apply.

If the transmission consist of a series of messages the receiving station gives an acknowledgment of each message as received.

**Closing Down.**

The end of traffic between two stations is denoted by each station signalling (...—.—), followed by its own call sign.

\* \* \* \* \*

The instruction given in this and the three earlier articles covers fully the requirements of the relative paper in the Amateur Operators' Proficiency Certificate examination. Students who have given due attention to the points discussed need have no qualms about sitting for this paper with every chance of success.

The remaining articles of the series will deal with the technical aspect of amateur transmission.

**Radio and the Press**

**Stimulating Interest.**

The "Labour Daily" ridicules the idea that radio broadcasting is in competition with newspapers.

"An average big city newspaper prints 100,000 words a day," says the "Labour Daily." "To speak the same amount of material over the radio would require eight to ten hours. To get all the news by radio, an enthusiast would have to listen all day and all night, and then might miss something. The real position is that information given over the air, such as the winner of a race, or the fact that an earthquake has occurred, gives listeners the first intimation of an event in which they are interested, and stimulates them to look for a fuller account in the newspaper."

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The "Elliott 3" complete .....	19 19 0
<b>(Something really better in Radio Sets)</b>	
4 Valve, complete .....	32 10 0
5 Valve, complete .....	£35, £40, 45 0 0
6 Valve, complete	£47 10 0, £65 120 0 0

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**THE ELLIOTT 3**  
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Code words (as distinct from plain language or from cypher) are ordinary words used in such a manner as to conceal the meaning; or pronounceable groups of letters not forming natural words. Cypher may be unpronounceable agglomerations of letters; or groups of figures. In code, 10, and in cypher, 5, letters are allowed as the maximum per word or group.

**The Ending.**

After the break sign (---...---) which separates the text from the signature comes the actual ending of the radiotelegram. The signature of the originator of the message is sent as written. Next comes the sign (---...---) indicating the end of the message, followed by the call sign of the transmitting station.

As an example of the foregoing a complete radiotelegram in transmitting form is given below. Readers will be able to decipher the various symbols and signs for themselves.

---...--- RADIO CANBERRA 17 13 26 11.17S ---...---  
 Smithson 229 Windsor Terrace Brisbane ---...---  
 Have you renewed subscription Queensland Radio News ---...---  
 BROOKES ---...--- VHO

**Signals Dealing With Money.**

This is a point not usually covered in books of instruction on telegraphy. How, for instance, would one transmit the figures representing 17/6 or £10/5/6? Many amateurs, not having seen the point discussed

in their textbooks, would avoid trouble by spelling the amount in words. Yet the transmission in figures is simple. The amount of pounds is signalled in the usual figure code, preceded by the signal **LX**. Between the pounds and the shillings is sent the signal (---...---) **NR**, representing "bar indicating fraction," as described in Article I, and the same signal is repeated between the shillings and pence. **LX** is only sent in the case of pounds.

**Fractions.**

Simple fractions, such as  $\frac{1}{2}$  & 5-16ths and the like present no difficulty. The numerator is transmitted, then the sign (---...---) followed by the denominator. But it is obvious that something more is needed to transmit, say 1 5-16ths in such a manner as would preclude its being read as 15-16ths. This is done by inserting between the whole number and the fraction a signal **MM** (---...---). Therefore, the signal for 1 5-16ths would read: ---...--- ---...--- .....

**Receipt of a Radiotelegram.**

The signal (---... R) followed by the number of the radiotelegram being acknowledged is used to indicate correct reception. The acknowledging station gives the call sign of the station which has transmitted the radiotelegram, followed by "R17" or "R65" or whatever the number may be, in turn followed by the call sign of the acknowledging station.

**Error in Check.**

If a transmitting station notices on a radiotelegram that a greater or lesser number of words have been



# DIAMOND DRY CELLS



"Diamond Batteries Make Good Sets Better"

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

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45-volt Super Capacity 22/6, 8 in. x 6 1/2 in. x 3 in.

60-volt Standard Capacity 18/, 6 in. x 5 1/2 in. x 2 1/2 in.

**C**— 4.5-volt "Biacon" 3/3 each.

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## UNCLE BEN'S BOOK-O'-FUN

A happy, healthy, interesting story-book for Australian boys and girls, compiled by the bed-time story-tellers at Station 4QG.

It carries a beautiful full colour cover, and is simply brimming over with good humour.

### CHILDREN !

Tell daddy that you simply MUST have it.

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by  
All  
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Stationers  
and  
Bookstalls



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

December 31st, 1926.

To All My Little Radio Friends,

Can you imagine that to-day is the very last day of the old year? My word, how quickly the day and years fly past—it only seems a little while ago since I was a little boy going to school, and wondering how long it would be before I would be able to wear long trousers and go to work. I used to think that as soon as I would be able to have my first shave I would be entitled to call myself a man. But now it is very different. I am wondering just what to do to stop the years from flying past so quickly.

Now, sweethearts, I am going to give you all a little advice for the New Year, and I hope you will all try and carry it out.

First of all, little ones, make up your minds that you will be good to your daddies and mummies—this will make you all so very happy—just try it and see. Now, I am going to tell you not to wish your time away, for you will find that if you do you will be unhappy and the time will not go any faster. Just make the best of each day that you live, and make up your mind that you will make as many people happy as you can. Remember the old saying:—

**"I shall pass through this world but once; any good, therefore, that I can do, let me do it now, for I shall not pass this way again."**

Remember, sweethearts, that we grown-up people all love to meet a happy little boy or girl—in fact, when I meet a happy little child I feel like lifting it into my arms and walking right home with it. You might laugh, but it is very true, and if I had my way I wouldn't let any of my sweethearts grow up at all—I would keep them all dear little boys and girls, so that they would always be loved by everybody.

Now, sweethearts, I must leave you all again for another month, and my wish to you is this:—

A HAPPY, HEALTHY and PROSPEROUS NEW YEAR to everyone of my little Radio Sweethearts.

You must turn over a new leaf now, little ones, and I advise you to practice that grand old Rule of Health:—"Early to bed and early to rise," and you will find that it will help you to grow up into sturdy young men and women.

Cheerio, little ones,

Your truly,

"UNCLE BEN."

P.S.—I have a little surprise for you. Commencing from next issue each of the story-tellers at 4QG will talk to you through the columns of the "Radio News." Won't that be just lovely?

## WORD-BUILDING COMPETITION

There has been nearly 200 entries received for the word-building competition published in the last issue of the "Radio News." This is splendid, but at the same time I think more would have been received but for a sentence that appeared in the conditions which, by enquires received, appears to have confused quite a number. You remember that the four words from which other words were to be built up from were—

## UNCLE BEN LOVES LETTERS

I stated that the letters appearing in these words could be used over and over again in different words, but the same letters could not be used twice in any one word. What I meant was this: you could only draw from the letters used in the words "Uncle Ben Loves Letters." You will see there are five letter "E's" in these words, but only one "V," thus you could use any word with five or less "E's," but a word with two "V's" would not be allowed, as there is only one "V" in the sentence.

Have I made it clear this time? Well go right ahead and send your entry in. The judging has been postponed until January 20th so as to give the doubtful ones an opportunity. There are some mighty good attempts in hand so you'll have to work hard to win. A prize to the value of 10/ is offered for the greatest number of words received.

## Uncle Ben's New Song Competition

On recent Saturday nights I have introduced a new song at 4QG to take the place of good old "How-do-you-do." The melody, (composed by a Brisbane lady) is really captivating and I have opened a competition in connection with this song, for which the Editor of "The Queensland Radio News" is offering prizes totalling in all £2/17/6. These competitions close on February 20th.

### MOST SUITABLE NAME.

A prize of £1/1/1 will be awarded for the best title for this song suggested by any boy or girl.

### BEST VERSE

For the best verse received a prize of £1-1-0 is offered; 2nd best verse, 10/6; 3rd best verse, 5/-. To give you some idea of the rhyme of the verses, a specimen verse is published hereunder. Listen in on Saturday nights and you will soon pick up the melody.

### VERSE—

Now here's to all our sweethearts

Who listen to 4QG.

Here's our new song—which we've promised so long—

Oh! it's making us dance with glee.

It's something very new, and we hope you'll like it, too.

We're singing it to you—instead of "How Do You Do?"

### CHORUS—

So Come along, come along, boys and girls

And join in the chorus, too.

We'd like you ALL to sing this song,

From Brisbane to Timbuctoo.

Send in all entries to The Editor, "Queensland Radio News," Box 1095N, Brisbane, marking the envelopes, "Uncle Ben's Competition."

**STOP PRESS**

# Radio Motor Hunt

## *4QG's Novel and Sensational Stunt*

Something entirely different was put over by 4QG on Thursday 30th December, and so successful and novel was the transmission that we considered it worthy of reserving space in our journal that we may be able to pass on first hand information concerning the particulars of "The Hunt."

The enthusiastic manner with which the stunt was taken up by listeners proved that the idea was fully appreciated.

A motor car carrying a party from the station travelled over a route which embraced the thickly populated areas of Brisbane and suburbs. It carried a blue light so as to render it distinguishable.

At eight o'clock its position was given and listeners were then asked to communicate with the station and report its whereabouts. The telephone was connected to the transmitter so that the voices of those calling were broadcast.

The success of the "stunt" was remarkable. From all parts of the route came reports of the car and many practical jokes made it even more interesting. One caller claimed that he had seen the car passing the Pile Light, while another stated that he had seen it pass through Goodna minus the driver.

Any listener was at liberty to hail the car and all that did were handed cards. These they were asked to fill in and send to the station, prizes being offered to those whose envelopes were open first.

Between 1500 and 2000 people stopped the car during its run, and enthusiasm ran very high. Wherever the car moved it was reported by telephone and crowds turned out at various points to hail the car.

So great was the success of the whole affair that we would suggest it be repeated in the near future.

## Catalogue Received

Manufacturers' Products Pty., Ltd., Challis House, Sydney, have sent us a copy of their new catalogue, featuring the various types of receivers handled by them. This little booklet is well printed, and one page display is given to each of the many attractive models which have already found an extensive market in Australia. The Crossley model featured is a very well-known model in this country. Model 51 is a two-valve set, and Model 52 a three-valve, while Model 51 is a special portable type installed in a leatherette carrying case which also accommodates batteries, headphones, and accessories.

Another receiver featured in the catalogue is the Henderson five-valve set, which is a Neutrodyne incorporating high-grade low loss parts and encased in a handsome cabinet with bakelite panel. In this set rheostats are eliminated and automatic control used. A feature of the set is the simplicity of tuning.

The Rotofor set is also shown. It incorporates five valves, yet has the remarkable feature of only one tuning control. It is operated with an "on" and "off" switch, and is enclosed in a genuine mahogany cabinet.

## ARCADE Wireless Depot

BRISBANE ARCADE,  
(Adelaide St. End.)

We stock the Famous Crossley Sets,  
Fada Neutrodyne, Rico-Dyne.

Udisco Three and Five Valve Sets.  
Demonstrations daily.

### 1 Valve Amplifier

1-Valve Amplifier to attach to Xtal Set, £3/5/-—beautiful tone and guaranteed loud speaker results.

Let us quote you for Repairs, Accessories, and Sets.

**CLUB ACTIVITIES.—Continued.****Townsville Radio Club**

A visitor to this office recently was Mr. E. Jeffries, secretary of the Townsville Radio Club. We were pleased to hear that this club is progressing, and has a membership of about 40. Several members are studying for the A.O.P. Certificate, and we believe Mr. W. Poultney, the president, is having special transmitting and receiving sets built, which he is donating to the first club member who is successful in passing this examination. Messrs. R. McKinnon and Stevenson (club members) are also making presentations to the second and third members to pass.

We are afraid the Radio Inspector is going to be kept busy with applications to sit for this examination. A few "fours" in Townsville would be a welcome addition to the "hams" in this State, and would help to keep lonely company. Hi! Hi! chaps, good luck and 73's from this journal.

**SAVAGE BROADCASTER.****Amusement at 2BL.**

A South Sea Island "boy" has taken possession of broadcasting Station 2BL Sydney. He talks with "Uncle George" on Thursday evenings during the children's hour, and so popular has the little fellow become that 40 letters have been received at the station inviting him to spend week-ends at various homes. So far no invitation has been accepted—and possibly the writers of the letters would be very surprised if they saw the young "savage." "What that fella boccus over there?" he asks, and "Uncle George" replies: "Boccus—boccus! we haven't any boccus!" "That fella boccus; you hammer him and he sing out," says the "South Sea Islander." "Oh!" says "Uncle George," "that isn't a boccus, that's a piano." Captain Hurley, the noted explorer has been a regular visit to broadcasting Station 2BL of late, and as he talks pidgin English as easily as the Australian language, he comes in useful to interpret for "Uncle George," whose failure to understand some of the pidgin is intensely amusing to his young listeners. No one outside the broadcasting station has yet seen this young "Islander," but thousands must have laughed at him.

**Not Always to Their Liking**

Even the most enthusiastic of them will admit that broadcast listeners do not find reception to their liking always. There may be some items that do not please—what programme director could arrange a number of items free from some objection from isolated types of listeners?—the volume from the loud speakers may not be sufficient, or the batteries may run down at a critical time. Such drawbacks are not to be wondered at. There is no form of entertainment that satisfies all the time, and every form of public utility justifies expressions of dissatisfaction from time to time. But there is something about broadcasting that causes people to put up with inconveniences without much complaint. Perhaps it is the novelty of the form of service that generates in

the listener a form of enthusiasm that is not easily quenched. Or it may be the newness of it that prompts listeners to have forbearance.

**Broadcasting in its Infancy—Hence the "Howls."**

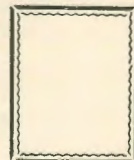
The listener certainly finds several forms of difficulty in trying to get an uninterruptedly good programme. A good item—a Percy Grainger solo from 3LO Melbourne, for instance—may be distorted by weird noises, which, with other kinds of sounds that are emitted from the loud speaker, at unexpected times and without any warning, are politely called "interference" by radio men. The noises certainly do interfere with the listeners' attempts to pick up the item clearly—and they interfere with the best efforts of the engineers to deliver the microphone goods intact and undistorted.

The particular form of interference recognised by howls and shrieks is caused by oscillating valve receivers. Not every valve receiver, fortunately, will produce in the next door neighbour's receiver these noises, but there are far too many receivers that will—and do—cause trouble. Such receivers, when badly handled, when allowed to oscillate, become transmitters, and in addition to picking up the electro-magnetic waves, also send out some energy capable of acting on nearby receivers in such a way as to produce the strange and annoying notes.

**CHURCH IN AN INN.****Listening by Radio.**

The village inn at Longstanton, Cambridgeshire, is equipped with a three-valve radio set, on which each Sunday the innkeeper receives a church service broadcast from London. All the labourers in the village attend regularly, and are delighted with the service. A writer in the "Radio Times" says: "On Monday I hear the most quaint opinions on the sermon, always in praise, and as the average Cambridgeshire agricultural labourer never attends church after arriving at working age, I feel sure that this is a very good work you are doing."

"Village inns," as known in England, are unknown in Australia, but many a country home picks up a church service on Sundays, and thus many persons who live in isolated places are able to hear the singing and preaching in a Sydney, Brisbane, or Melbourne church.



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

Subscription **6/6** year

*Make your Old Set Up-to-date*

with

## EMMCO VERNIER DIALS



It Will LOOK  
Better

It Will WORK  
Better

Bakelite Frame, 9/6; Metal Frame, 6/9.

Made in Mahogany and Maroon Finish.

Obtainable with clockwise  
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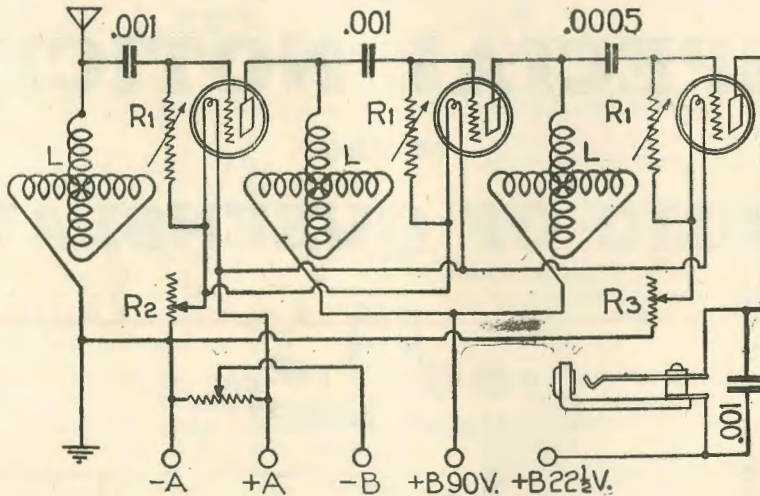
Manufactured by

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

Scrap those old dials and put in Emmco Verniers. You'll be amazed at the difference. **Selectivity** such as you've never had before—hair-breadth tuning that **gets between** those crowded stations—**easy control** that makes tuning-in the work of a moment—and last, but not least, a wonderful **lustrous finish** that makes your old set look like new.

If you are not already familiar with the merits of Emmco investigate **NOW**. Remember that it has the advantage of hair-line adjustment and a special logging window. Remember also, there is no back-lash, no slipping, and it makes tuning easy and absolutely precise.



## A Variometer Coupled Radio Frequency Receiver

(By Carlton E. Butler.)

(Member American Institute of Electrical Engineers and Institute of Radio Engineers.)

Properly constructed, with good parts and workmanship, the variometer coupled radio frequency receiver is surpassed only by the super-heterodyne for efficiency and range. Selectivity is remarkable and the set will not radiate energy while the tubes are controlled at their proper operating point by the potentiometer.

It has been repeatedly demonstrated that tuned radio frequency amplification is essential to provide sufficient selectivity to tune through the maze of broadcasting stations now on the air, and to give sufficient volume to operate a loud speaker on distant stations. At the present time the majority of radio receivers incorporate tuned radio frequency in some form or other.

The circuit described in this article uses a combination of fixed condensers and inductive tuning in place of the usual arrangement of fixed transformers and variable condensers. Variometers are used instead of condensers for tuning, and the receiver is stabilised with a series of variable resistances from the grids of the tubes to the negative filament lead. The following parts will be needed:—

3—Variometers capable of tuning from 200 to 500 metres.

3—.001 mfd. mica fixed condensers.

1—.0005 mfd. mica grid condenser.

1—200,000 ohm non-inductive variable resistance.

2—centralab non-inductive variable grid leaks.

1—400 ohm centralab non-inductive noiseless potentiometer.

1—Each of 30 ohm and 1 ohm rheostat of centralab type.

1—Telephone jack.

3—Sockets.

Binding posts, wire, etc.

The resistances are very important, the one on the first tube should be capable of going below 10,000 ohms. For this purpose the 200,000 ohm radiohm, as manufactured by the Central Radio Laboratories of Milwaukee, is recommended for the first R1.

For noiseless reception it is essential that the non-inductive variable grid leaks, such as centralab, be used for R1 on the second and third tubes. Once the leaks have been adjusted so that oscillation does not occur at any setting of the dials, further adjustment will not be required except with the potentiometer, which controls volume and will be found very helpful in tuning in distant stations.

As the first two tubes are controlled by a single rheostat, it need be but half of the resistance required for operating a single tube. A 30 ohm rheostat will control the first two tubes if they are of the UV199, C299, UV201A or C301A type. A 5 ohm will be the proper size for the detector if the one ampere UV200 or C300 detector is to be used. A 30ohm is best for the other types of tubes.

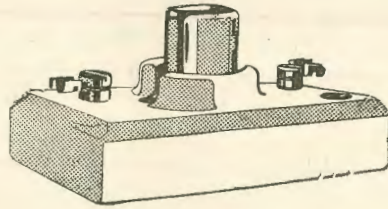
Stations will generally come in over the first part of the first variometer dial and over the latter half of the second and third dials.



# SPECIAL NOTICE

to the

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### BEANCO RADIO ARRESTERS

are made in Australia on mass production lines and sold to the public at the reasonable price of

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**LIFELONG GUARANTEE.** Beanco Arresters carry a lifelong guarantee against faulty workmanship and material, but this guarantee applies only to Beanco Arresters purchaser from reputable dealers at 5/9 each.

We will not be responsible for Arresters sold by price-cutters AT LESS THAN 5/9, as we do not do business with such concerns, and have no means of guaranteeing that they give the public the genuine and undamaged Beanco Radio Arrester.

**PROTECT LIFE AND PROPERTY.** The protection of life and property is surely worth 5/9. Take no risks, buy from reputable dealers at the list price, and you will be sure of a FULLY GUARANTEED Beanco Radio Arrester.

**OVER 100,000 IN USE IN AUSTRALIA  
AND NEW ZEALAND**

*If your local dealer has no stocks write direct to the Queensland Wholesalers.*

## HOME RADIO SERVICE LTD.

COURIER BUILDING.

Phone C6143.

BRISBANE.

*Inserted by the Manufacturers—L. P. R. BEAN & CO. LTD., Sydney*

# Wireless Notes

Contributed by Amalgamated Wireless (A'asia) Ltd.

## THE CARE OF VALVES.

Valves are the most fragile part of the receiving set. Being comparatively expensive, they must be treated in a very considerate manner. Every valve has a certain rated filament voltage, and for efficiency and long life they must be operated at this voltage. By burning a valve too brightly a slight increase in signal strength may result, but the life of the valve is considerably shortened.

If valves are burned too dimly, results will not be good. Examine the carton which contained the valve. On it you will see the voltage necessary for correct operation. In the case of a bright emitter valve, the necessary voltage will be 5. It is, however, usual to use a 6-voltage accumulator, which leaves a reserve voltage in hand, and permits fine control by means of the resistance. In the case of bright emitter valves, when you apply the voltage, the valve will soon tell you whether you are burning it properly. If it is not bright enough, signals will be absent or very weak. If too bright they will be distorted. With dull emitter valves, where the usual voltage is 3, a 4-volt accumulator is necessary.

The necessary plate voltage will vary according as to whether the valve is being utilised as a detector or amplifier. Where the valve is a detector the plate or "B" battery voltage is generally in the neighbourhood of 30-40, while in the case of an amplifying valve the "B" battery voltage will be from 90 to 135.

When valves are being placed in their sockets, always disconnect the "B" battery, which is the high-tension battery. If it is accidentally connected to the filament terminals the valve will be destroyed.

If possible, always let a valve burn for a while with the "B" battery disconnected. This "burning-in" allows the valve to warm up and settle down for operation. It is a good practice with the new valves, and improves the valve considerably.

An hour or two of this treatment means a lot in the subsequent life and use of the valve.

When a valve is in its socket and working well, leave it alone. Being fragile, a valve does not improve by handling. If you must remove it from its socket, be gentle. It is a good plan to save your valve cartons; then you have a safe receptacle in which to place the valves. If it is a four-valve set, number each carton 1, 2, 3, and 4. Place No. 1 valve in No. 1 carton, and so on. A little care here saves a lot of trouble later. A valve, which is a good detector, may be a poor amplifier, and vice versa. When ordering new valves state the purpose for which they are required.

Remember—

Never burn valves too brightly.

Never remove or replace valves with "B" battery connected.

Never forget that valves are fragile.

Never burn valve filaments above rate amperage and voltage.

Never insert valves in sockets unless absolutely certain that the resistance control is turned off, or at the proper setting for normal operation.

Never make the drastic error of connecting the plate battery to filament terminals—watch all battery connections.

Never make any alterations in your wiring while the valves are in their sockets. High voltage for the filament spells disaster for your valve.

Never expect a continued increase in signal strength; as your filament temperature increases beyond normal. You will only reduce the life of your valve. Valves function best at one particular point—when you increase their filament current beyond this point, you do the signal no good, and the valve great harm.

## HOW CRYSTAL DETECTORS OPERATE

As a detector of electromagnetic waves the crystal was used when radio-telegraphy was in its infancy and for a number of years it ranked as the most sensitive device for converting electromagnetic waves into audible signals. With the invention of the 3-electrode Thermionic Valve, which is, of course, the most sensitive device at present known for the detection and amplification of wireless signals, the crystal was more or less discarded.

With the advent of broadcasting two or three years ago the crystal detector again came into prominence, because it is admirably suitable for the reception of broadcast programmes over short distances on account of its extreme simplicity, low initial cost and economical operation. There are many crystal receiving sets in use to-day and a brief explanation of how the crystal functions should be of interest.

It is many years since scientists and other investigators discovered that some crystals possessed the peculiar property of being more conductive in one direction than in the other with respect to electric currents. By this is meant that if an alternating current, that is one which is periodically changing its direction of flow, is applied to a piece of this crystal the current will be transformed into kicks or pulses, each flowing in the same direction or in other words, the current flow becomes unidirectional or rectified. The ether waves arriving from the broadcasting station cause rapidly alternating currents to flow in your aerial. If you are using a secondary circuit inductively associated with the aerial, currents at

the same frequency are transferred to this circuit and when these currents are applied to the crystal detector they are converted into direct pulses which form a practically continuous current. This current will be steady, provided the amplitude of the ether waves is steady and as our ears cannot respond to these high frequencies, nothing will be heard. When, however, the amplitude of the ether waves, or carrier waves as they are known in broadcasting, is varied by superimposing on them sound waves then our high frequency pulses through the telephone receivers will vary in strength also, and what is more important they will vary in exact accordance with the sound waves impressed on the microphone transmitter in the studio. This means that the telephone diaphragms will vibrate in accord with the sound waves which reach the studio microphone transmitter.

This rectifying property is possessed by several varieties of crystals, some of which require the passage of a very small continuance current from a local battery through them for best results. This is because the current flowing through the crystal does not increase in direct proportion to the electrical pressure applied, as is the case in an ordinary conductor. This means that when the ether waves come along to our receiver and set up a certain electrical pressure or voltage, the current in the telephone only increases slightly, but after a certain voltage is reached the current then increases rapidly, so that if we supply this first initial voltage from a couple of dry cells we can operate our crystal in such a condition that a further increase of voltage caused by the broadcasting station signal will give rise to a large current increase in the telephone receivers; thus, by the use of such a battery, we can obtain more current and therefore, louder signals.

Carborundum is a crystal of this type and in order to find the correct voltage necessary which will probably vary with different pieces of crystal, a potentiometer with a 3-volt battery is used so that the voltage may be gradually supplied to the crystal from zero to a maximum. Although not very popular on account of requiring a battery and potentiometer, carborundum has many advantages, the chief being its stability. When once a good point is found, the crystal will remain in adjustment for months and will even withstand knocks, jolts, etc., because unlike most other crystals, it requires a contact of considerable pressure.

Galena crystal is perhaps, the most popular because unlike carborundum it requires no battery and is extremely sensitive. Its drawback lies in the fact that it requires a very light contact and therefore, the slightest knock or vibration throws it out of adjustment.

Silicon is also a favourite crystal which requires a light contact.

It will be found an advantage to mount the crystal holder on a piece of spongy rubber to make it more or less immune from vibration. The following useful hints will be helpful in keeping your crystal in working order.

The cat whisker or contact point should always be kept perfectly clean and periodically rubbed with a

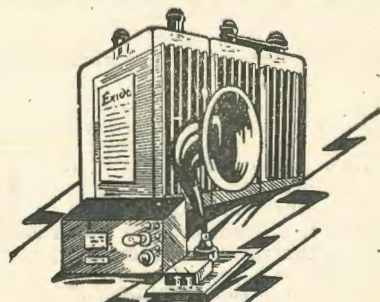
small piece of emery cloth. For the cat whisker or contact it is advisable to use light wire of some metal (preferably gold) which will not readily oxidise since the slightest film of oxidation will act as an insulator between the wire and the crystal surface.

If your crystal is exposed a film of dust or moisture may form on the surface and this in time causes the sensitivity to decrease. This can generally be overcome by breaking the crystal carefully until a new surface is exposed, or better still use one of the many crystal cups on the market, in which the crystal is enclosed in a glass cylinder. The crystal should not be handled with the fingers as this will put a minute film of grease on its surface, the grease acting as an insulator and decreasing its sensitivity.

Many listeners, no doubt, attempt to improve the operation of the crystal by scraping the surface with a knife, but this is bad practice because it is extremely difficult to obtain a new and clean surface by this means. It is far better to break the crystal keeping your fingers off the new surface.

#### WIRELESS IN STRANGE PLACES.

Wireless enthusiasts are to be found in many strange places. Many Brisbane people have noticed that one of the taxi drivers on the Creek Street ranks is an enthusiast. He has a small crystal set in his car, and while waiting on the rank throws a small piece of talking tape up to the verandah of the Commonwealth Bank, and secures an ear on the framework of the car. By this means he brightens quite a number of waiting hours.



**Exide**  
WIRELESS BATTERIES

MEAN—

Freedom from noises  
Clearer receptions  
Longer life  
Uniform service

From all Radio Dealers.

**EXIDE BATTERY SERVICE**  
(Q.) LIMITED.

QUEEN ST., PETRIE BIGHT, BRISBANE.

# Gunn's Gully

*Ben Bowyang Prepares a Radio Talk for 3LO*

(By C. J. DENNIS.)

dere sir

erewith is a movin an troo akount of the important center of gunns gully which I ave got redy in case 3LO might like to let the publick ave sompthink reely interestin

the artikle is as follors viz:

## GLORIUS GUNNS GULLY

The Glu Pot of Victoria.

the thrivin littel town of gunns gully is sitchooated at present in the northrin part of the state tho there as been sum tork lately of shifftin it neerer Melbun to save the government truble becos if the mountin wont cum to mumit then mumit will ave to go to the mountin

the xlint ashfelt rode ideel for motors and awl uther kinds of veekler trafick is running at present thro the minds of the state athoritys but there is a bullick track sum yeers old wich may be traveled on foot if you got good boots a strong art and plenty of time

When you reech the charmin little town yure intrest is immejity centered on ow to git back agen but wunce you git used to the raryfide atmusfeer an rustick seroundins you decide it wud be better to wate till the rane stops

There is much ere to intrest the visiter includin trees paddicks cows sum sky an torkin about the wether

## CLIMIT

The climit of gunns gully differs at odd times but there is a grate deel of its of awl kinds

## INDUSTRYS

there are many thrivin industrys in the gully incloodin gorge guffins post ole factory which as a daily output of 20 post oles a day if gorge aint got no wun to tork to

the machinery of this factory incloods 1 shovel 1 cro bar 1 spade and 1 gorge guffin

the factory is at present bildin wun arf mile of fensin an gorge reckuns e ort to finish by crismus if is lumbager don't get wurse

there is also sevrel pertater plants workin full time

there is also sor mill but this aint wurkin at present as the ingin as blu up

but as this as appened sevrl times prevyus enery poppil who runs it opes to start agen as soon as cums out of ospital if e can find sum more ole pipin to pack the toobs

uther intrestin macheenry plants incloods Mister Bowyangs winmill an the wireless rajo set belongin to arry fungis wich as picked up 3LO on to (2) seperit okashins thou sum olds that it was a burd roostin on the arial

## EXPORTS

the exports of gunns gully is pertaters sawed timber an cumplaints

so fur the cumplaints ave not brot in anny inkum but it is oped that when this lokil industry is on its feet residints will be abel to git off of theirs an into moter cars

it as bin estimated that if awl the sawed timber xported frum gunns gulley in wun yeer it would taik a orful lot of ard work stackin it up agen

an if awl the pertaters dug up in 12 munce was placed wun on top of the uther they wud evenchilly reech the ites of abserdity

owever these feets ave not yet bin dun

## IMPORTS

the cheef imports of gunns gully is tucker and towristis

The former is fed to the latter wich perdooces mune to by more of the former to feed to more of the latter to prodooce more mune thus formin wot is nown to stoodints as nacheril istry as a vishus circle tho sumtimes it is the towrist wot adops this form

## SPORTS

the gully owns a tennis cort wich is ideel to play on when it is not to muddy in winter or to dusty in sumer

the bumps an ollers pervides azards that maiks the game orful intrestin an as the presiden sez it is just as fare fur wun as anuther an anny balls lorst in the scrub as to be pade for by the itter

there was wunce a very fine 3 ole golf corse around jim aireys paddick but wen it was foun that ole jim ad put false bottoms in the jam tins an was sellin the disapeerin balls back to the club at a uge profit golf becum unpopular

altogether this charmin country resot pervides a cumpleet change for the city visiter

the community is going ahead by leaps an bounds and as bin doin so for sum yeers but it is oped to alter this when the ruts an pot oles ave bin filled in

there is a skeem an foot to ave a back to gunns gully movemint in the neer furcher an residints is intusiastick as that is where they wud like their backs to be

thank you for listnin in good nite

Me an 3LO opes that this littel ad for my ome town will ave the rite effect but I can say no more at present as I am in grate pane joo to interyer stakicks

hoppin you are the saim

Yures truly

BEN BOWYANG.

*Harringtons*

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## Whispers from Maoriland

All radio men and women, professional and otherwise, in New Zealand, wish their Australian cousins a Merry Christmas and a bright and prosperous New Year. It is the wish of all that the year 1927 will see further marked progress in the wireless world, a progress which is sure to come, if the happy relationship now existing between broadcasters and listeners continues in the future as it has done in the past.

The Amateur Radio Society of Wellington has decided to urge the Postmaster-General to exercise his right to call upon the Broadcasting Company to erect and operate an up-to-date broadcast station in the Wellington District similar to those in Auckland and Christchurch, within six months, as stipulated in the agreement between the Government and the company.

It was also decided to bring under the Minister's notice the desirability of shortening the wave length of the New Zealand stations to reduce interference from ship spark transmission; also of allotting a new wave-length so that New Zealand station will not interfere with the reception of the Australian stations. The society further resolved to lodge a complaint concerning the marked distortion of transmission by the Christchurch Station, as heard in Wellington, and similar, but less frequent lapses by the Auckland Station, and frequent fading by the latter.

The first prosecution for non-payment of radio license fee took place in Auckland recently, when a young man was proceeded against for erecting a wireless outfit without obtaining a license. It was stated that the defendant had had his apparatus in position three weeks before it was licensed. The license fee is 30/- and the magistrate imposed a fine of £3 and costs 7/-.

The complaint of "piracy" by the use of unlicensed receivers will, like the poor, always be with us, and it is easy to exaggerate it. There are, no doubt, far more unlicensed sets in some places than in others, and the license-payers will always to carry a proportion of dishonest stowaways. But if there are a great number of "pirates" there is little evidence of their being prosecuted, and this indicates, one would assume, that they flourish where the inspector is not known, and that between them the Department and the dealers should be able without great difficulty to discover where they chiefly congregate.

The Broadcasting Company is to be congratulated in securing the services of Mr. Prentice, so well known in the Australian wireless circles, to look after the entertainment side of the service. It would do well now to secure another highly qualified expert to take charge of the technical supervision of the service, and if it does so, it may be suggested that the fact be prominently announced. Mr. Prentice's appointment was apparently "discovered" by some writer for the daily press, who extracted the information from an Australian paper. Such announcements are worth money to the company; they bring in license fees.



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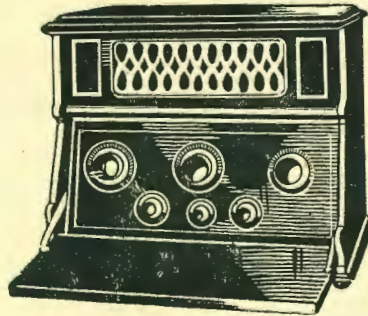
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